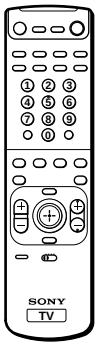
Self Diagnosis
Supported model

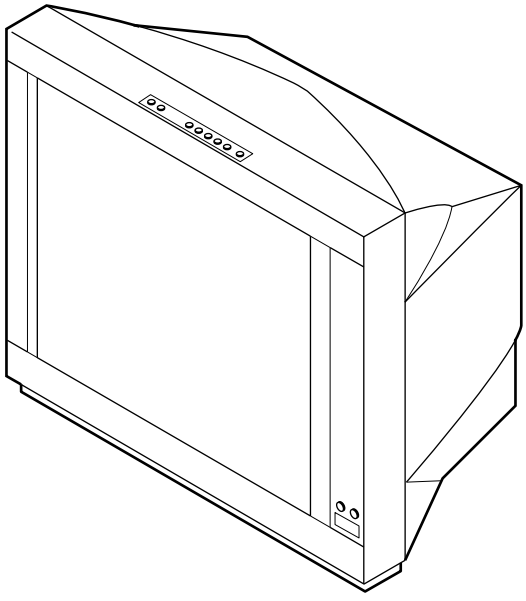
SERVICE MANUAL

AG3 CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-ES29M80	RM-916	ME	SCC-P32A-A
KV-ES29M81	RM-916	ME	SCC-P32B-A
KV-ES29M90	RM-916	JE	SCC-P34A-A

MODEL	COMMANDER	DEST.	CHASSIS NO.





MICROFILM

TRINITRON ® COLOR TV

SONY ®

SPECIFICATIONS

		Note
Power requirements	110-240 V AC, 50/60 Hz	
Power consumption (W)	Indicated on the rear of the TV	
Television system	B/G, I, D/K, M	
Color system	PAL, PAL 60, SECAM, NTSC4.43, NTSC3.58	
Stereo/Bilingual system	NICAM Stereo Bilingual B/G, I; A2 Stereo Bilingual (German) B/G	
Teletext Language	English, Arabic, French	
Channel coverage		
B/G	VHF: E2 to E12 / UHF: E21 to E69 / CATV: S01 to S03, S1 to S41	
I	UHF: B21 to B68 / CATV: S01 to S03, S1 to S41	
D/K	VHF: C1 to C12, R1 to R12 / UHF: C13 to C57, R21 to R60 CATV: Z1 to Z39, S01 to S03, S1 to S41	
M	VHF: A2 to A13 / UHF: A14 to A79 / CATV: A-8 to A-2, A to W+4, W+6 to W+84	
Antenna)	75-ohm external terminal	
Audio output (Speaker)	15W + 15W	10% distortion
Number of terminal		
(Video)	Input: 4 Output: 1	Phono jacks; 1 V_{P-P}, 75 ohms
(Audio)	Input: 4 Output: 1	Phono jacks; 500 mVrms
(S Video)	Input: 2	Y : 1 Vp-p, 75 ohms, unbalanced, sync negative C : 0.286 Vp-p, 75 ohms
(Component Video)	Input: 1	Phono jacks Y : 1 Vp-p, 75 ohms, sync negative C_B : 0.7 Vp-p, 75 ohms C_R : 0.7 Vp-p, 75 ohms Audio : 500 mVrms
DIGITAL IN	Input: 1	Phono jack; 0.5 Vp-p, 75 ohms
(Headphones)	Output: 1	Stereo minijack
Picture tube	29 inch	
Tube size (cm)	72	Measured diagonally
Screen size (cm)	68	Measured diagonally
Dimension (w/h/d, mm)	722 x 561 x 524	
Mass (kg)	56	

Design and specifications are subject to change without notice.

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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SELF DIAGNOSTIC FUNCTION

The units in this manual contain a self-diagnostic function. If an error occurs, the STANDBY/TIMER lamp will automatically begin to flash.
The number of times the lamp flashes translates to a probable source of the problem. A definition of the STANDBY/TIMER lamp flash indicators is listed in the instruction manual for the user's knowledge and reference. If an error symptom cannot be reproduced, the remote commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

1. DIAGNOSTIC TEST INDICATORS

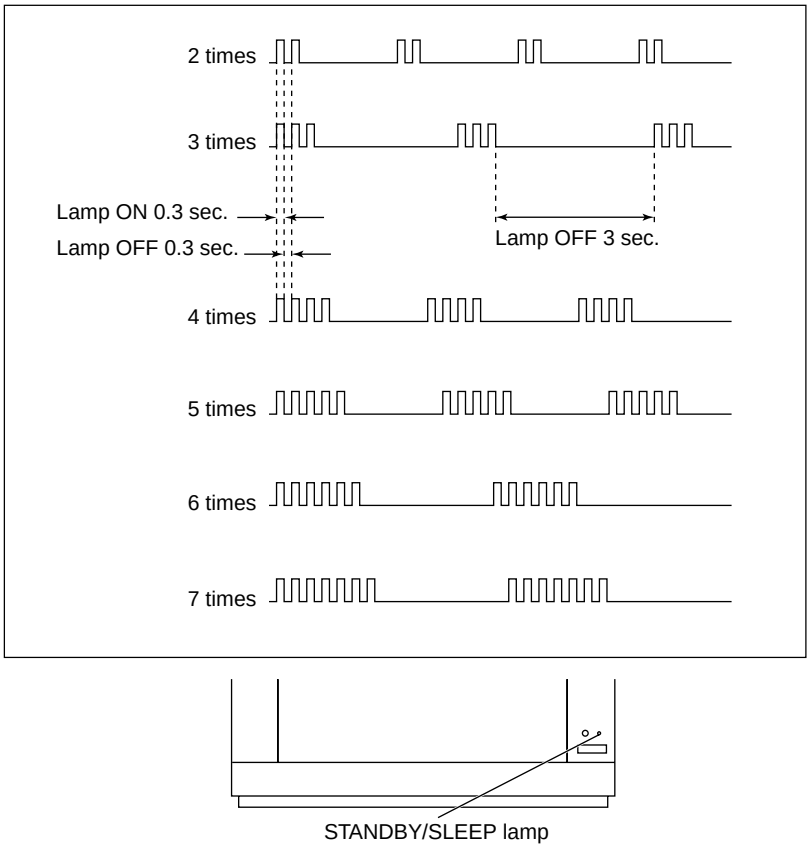
When an errors occurs, the STANDBY/TIMER lamp will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the lamp will identify the first of the problem areas.

Result for all of the following diagnostic items are displayed on screen. No error has occured if the screen displays a "0".

Diagnostic Item Description	No. of times STANDBY/TIMER lamp flashes	Self-diagnostic display/Diagnostic result	Probable Cause Location	Detected Symptoms
• Power does not turn on	Does not light	—	• Power cord is not plugged in. • Fuse is burned out F1601 (F1 Board)	• Power does not come on. • No power is supplied to the TV. • AC power supply is faulty.
• +B overcurrent (OCP)	2 times	002:000 or 002:001~255	• H.OUT Q6807 is shorted. • H.LIM Q6810 is shorted.	• Power does not come on. • Load on power line is shorted.
• +B overvoltage (OVP)	3 times	003:000 or 003:001~255	• PH 6602 faulty. • 10.5V is not supplied. (D board)	• Power does not come on.
• Vertical deflection failure	4 times	004:000 or 004:001~255	• V.OUT IC6800 faulty D6816 faulty D6817 faulty D6824 faulty R6852 open R6851 open	• Vertical deflection pulse is stopped. • Vertical size is too small. • Vertical deflection stopped.
• White balance failure (no PICTURE)	5 times	005:000 or 005:001~255	• G2 is improperly adjusted. (Note 2) • CRT problem. • Video OUT IC9001, 9002, 9003 are faulty. (C board) • IC8306 (J board) and IC4301 (E board) are faulty. • No connection E board to C board.	• No raster is generated. • CRT cathode current detection reference pulse output is small.
• Horizontal deflection failure	6 times	006:000 or 006:001~225	• C6831 is open circuit. • CN6101 (D1 board) is disconnected.	• H pulse output is too high.
• Audio Protection	7 times	007:000 or 007:001~225	• Power supply fails. • IC1203, IC1204 faulty	• There is picture but speaker does not release sound.
• Micro reset	—	101:00 or 101:001~225	• Discharge CRT (C Board) • Static discharge • External noise	• Power is shut down shortly, after this return back to normal. • Detect Micro latch up.

Note 1: Refer to screen (G2) Adjustment in section 4-5 of this manual.

2. DISPLAY OF STANDBY/TIMER LIGHT FLASH COUNT



Diagnostic Item	Flash Count*
+B overcurrent	2 times
+B overvoltage	3 times
V deflection stop	4 times
White balance failure	5 times
High voltage protector	6 times
Audio Protection	7 times

* One flash count is not used for self-diagnostic.

3. STOPPING THE STANDBY/TIMER FLASH

Turn off the power switch on the TV main unit or unplug the power cord from the outlet to stop the STANDBY/TIMER lamp from flashing.

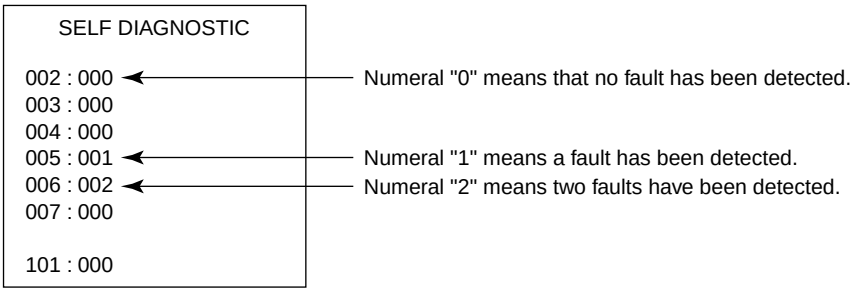
4. SELF-DIAGNOSTIC SCREEN DISPLAY

For errors with symptoms such as “power sometimes shuts off” or “screen sometimes goes out” that cannot be confirmed, it is possible to bring up past occurances of failure for confirmation on the screen:

[To Bring Up Screen Test]
In standby mode, press buttons on the remote commander sequentially in rapid succession as shown below:

Screen display ➡ channel 5 ➡ Sound volume - ➡ Power ON
⇧
Note that this differs from entering the service mode (mode volume +).

Self-Diagnosis screen display


SELF DIAGNOSTIC
002 : 000
003 : 000
004 : 000
005 : 001
006 : 002
007 : 000
101 : 000
Numeral "0" means that no fault has been detected.
Numeral "1" means a fault has been detected.
Numeral "2" means two faults have been detected.

5. HANDLING OF SELF-DIAGNOSTIC SCREEN DISPLAY

Since the diagnostic results displayed on the screen are not automatically cleared, always check the self-diagnostic screen during repairs. When you have completed the repairs, clear the result display to “0”.

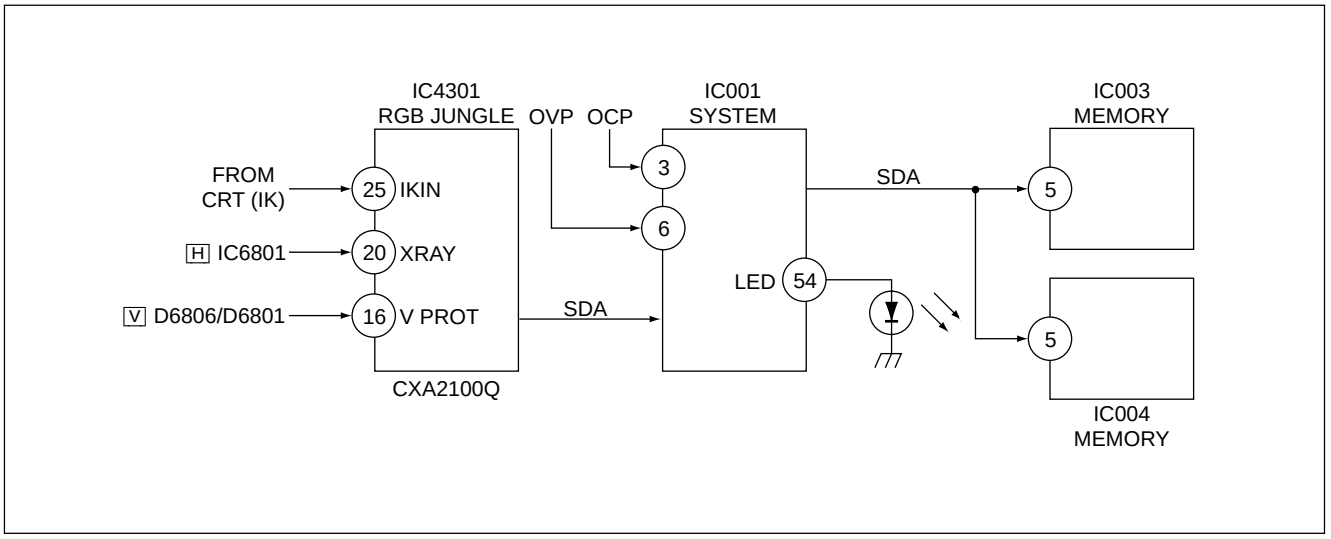
Unless the result display is cleared to “0”, the self-diagnostic function will not be able to detect subsequent faults after completion of the repairs.

[Clearing the result display]
To clear the result display to “0”, press buttons on the remote commander sequentially as shown below when the diagnostic screen is being displayed.

Channel 8 ➡ 0

[Quitting Self-diagnostic screen]
To quit the entire self-diagnostic screen, turn off the power switch on the remote commander or the main unit.

6. SELF-DIAGNOSTIC CIRCUIT



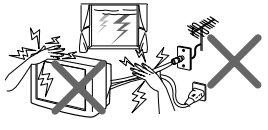
+B overcurrent (OCP)	Occurs when an overcurrent on the +B(135) line is detected by Q6610 and Q6609. If Q6610 and Q6609 go to ON, the voltage to the pin3 of IC001 go to UP. The unit will automatically turn off.
+B overvoltage (OVP)	Occurs when an overvoltage on the +B(135) line is detected by D6635, Q6611 and Q6612. If Q6611 and Q6612 go to ON, the voltage to pin6 of IC001 go to UP. The unit will automatically turn off.
Vertical deflection failure	Occurs when an absence of the vertical deflection pulse is detected by Q6811, Q6819, Q6820, Q6821 and D6801. Shut down the power supply.
White balance failure	If the RGB levels do not balance or become low level within 5 seconds. This error will be detected by IC4301. TV will stay on, but there will be no picture.
High voltage protector of Horizontal Deflection	Occurs when an overvoltage of horizontal pulse is detected by D6809 and IC6801. If the voltage of 7 pin of IC6801 goes to High, the voltage to pin20 of IC4301 go to UP. The unit will automatically turn off.

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

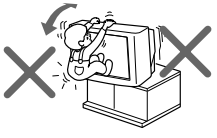
SECTION 1
GENERAL

WARNING

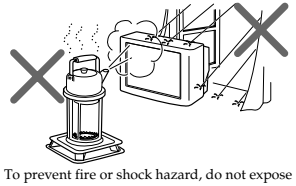
- Dangerously high voltages are present inside the TV.
- Operate the TV only between 110 – 240 V AC.



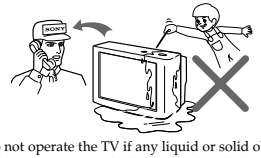
For your own safety, do not touch any part of the TV, the power cord and the antenna cable during lightning storms.



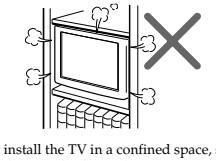
Install the TV in a stable position. Do not allow children to climb onto it.



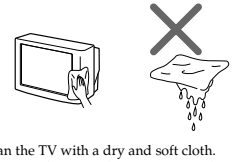
To prevent fire or shock hazard, do not expose the TV to rain or moisture.



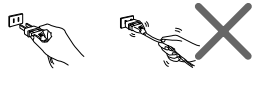
Do not operate the TV if any liquid or solid object falls into it. Have it checked immediately by qualified personnel only.



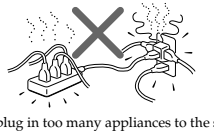
Do not install the TV in a confined space, such as a bookcase or built-in cabinet.
Do not block the ventilation openings of the TV.



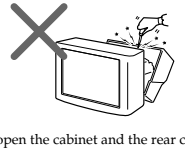
Clean the TV with a dry and soft cloth.
Do not use benzine, thinner, or any other chemicals to clean the TV. Do not scratch the picture tube.



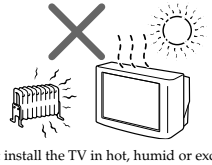
Pull the power cord out by the plug. Do not pull the power cord itself. Disconnect the TV if you are not going to use it for several days.



Do not plug in too many appliances to the same power socket. Do not damage the power cord.



Do not open the cabinet and the rear cover of the TV. Refer servicing to qualified personnel.



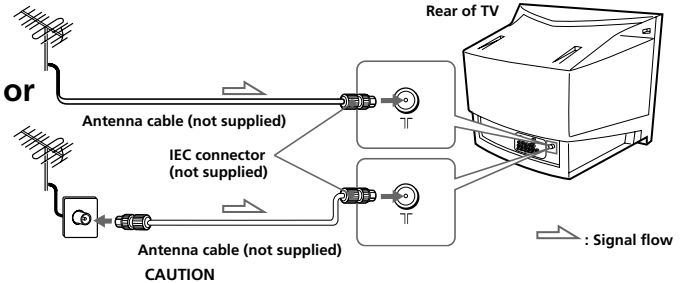
Do not install the TV in hot, humid or excessively dusty places.

Getting Started

Step 1

Connect the antenna

If you wish to connect a VCR, see the "Connecting a VCR" diagram below.

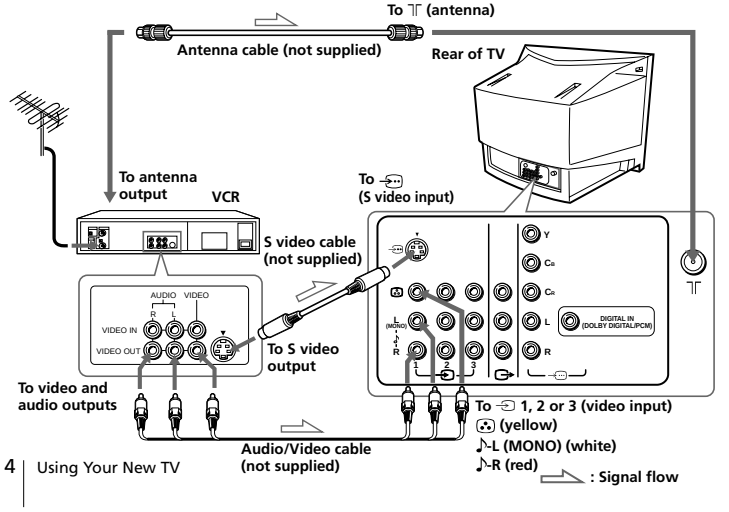


CAUTION

Do not connect the power cord until all other connections are complete; otherwise, a minimal current leakage through the antenna and/or other terminals to the ground could occur.

Connecting a VCR

To play a video tape, press ⏎ (see page 11).

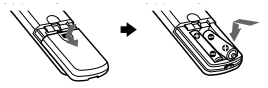


Notes

- If you connect a monaural VCR, connect the yellow plug to (the yellow jack) and the black plug to ♪-L (MONO) (the white jack).
- If you connect a VCR to the (antenna) terminal, preset the signal output from the VCR to the program number 0 on the TV.
- When both the (S video input) and 1 (video input) are connected, the (S video input) is automatically selected. To view the video input to 1 (video input), disconnect the S video cable.

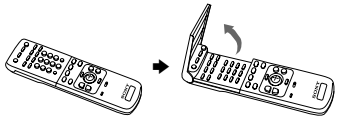
Step 2

Insert the batteries into the remote



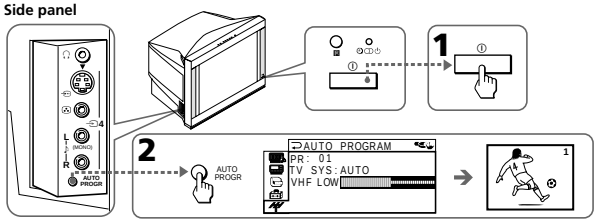
Notes

- Do not use old batteries or different types of batteries together.
- To operate some of the functions of your TV, you may have to open the remote control cover.



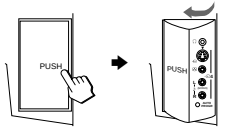
Step 3

Preset the channels automatically



Notes

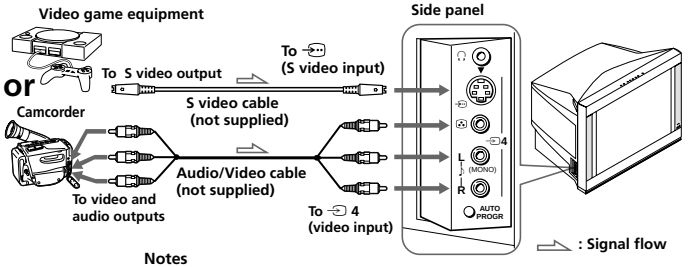
- To stop the automatic channel presetting, press MENU twice.
- If your TV has preset an unwanted channel or cannot preset a particular channel, then preset your TV manually (see page 43).
- To open the side panel of your TV, push on it until you hear a click, then it will open.



Connecting optional components

You can connect optional audio/video components, such as a VCR, multi disc player, camcorder, video game, or stereo system. To watch and operate the connected equipment, see pages 11 and 27.

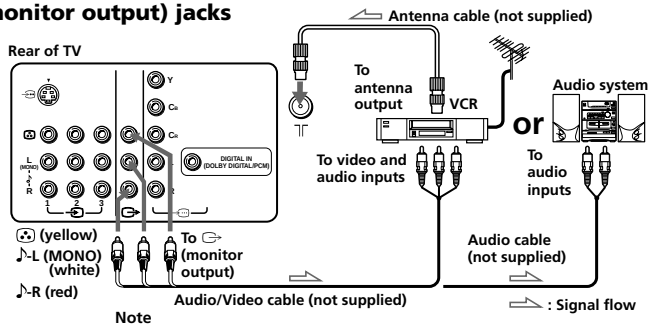
Connecting a camcorder/video game equipment using the (video input) jacks



Notes

- When connecting video game equipment, display the "FEATURE" menu and select "ON" for "GAME MODE" to adjust the picture setting that is suitable for video games (see page 38).
- You can also connect video equipment to the 1, 2, or 3 (video input) jacks at the rear of your TV.
- When both the (S video input) and 4 (video input) are connected, the (S video input) is automatically selected. To view the video input to 4 (video input), disconnect the S video cable.

Connecting audio/video equipment using the (monitor output) jacks



Note

- If you select "DVD" on your TV screen, no signal will be output at the (monitor output) jacks (see page 11).

KV-ES29M80/ES29M81/ES29M90
RM-916

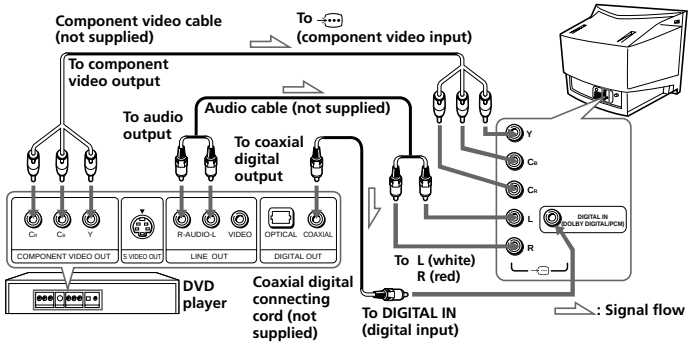
Connecting a DVD player to (component video input)

1 Using an audio cable, connect R and L under (component video input) on your TV to the LINE OUT, AUDIO R and L output connectors on your DVD player.

2 Using a coaxial digital connecting cord, connect DIGITAL IN under (component video input) on your TV to the DIGITAL OUT, COAXIAL output connector on your DVD player.

3 Using a component video cable, connect Y, C_B, and C_R under (component video input) on your TV to the COMPONENT VIDEO OUT Y, C_B, and C_R output connectors on your DVD player.

4 Press on the remote or the TV until "DVD" appears on the screen.



Notes

- Some DVD player terminals may be labeled differently:

Connect	To (on the DVD player)
Y (green)	Y
C_B (blue)	C_b, B-Y or P_B
C_R (red)	C_r, R-Y or P_R

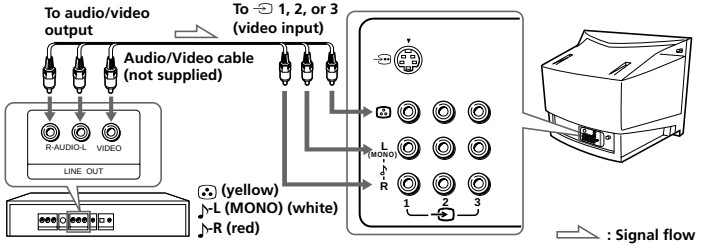
- When connecting to (component video input) on your TV, you must connect Y, C_B, and C_R to receive the video signals, and at least connect DIGITAL IN to receive digital audio signals or connect L and R to receive analog audio signals (see page 34).
- When making connections to DIGITAL IN under (component video input) on your TV, always set "DIGITAL IN: OFF" in the "A/V CONTROL" menu. After completing all connections, then set "DIGITAL IN: ON". If you set "DIGITAL IN: ON" while still making connections to DIGITAL IN (component video input), a loud noise may suddenly come out from the speakers, affecting your hearing and causing damage to the speakers (see page 34).

continued

Connecting optional components (continued)

Connecting a DVD player to (video input)

Connect 1, 2, or 3 (video input) ♪/ (audio/video) connectors on your TV to LINE OUT on your DVD player.



Notes

- Since the high quality pictures on a DVD disc contain a lot of information, picture noise may appear. In this case, adjust the sharpness ("SHARP") under "PERSONAL ADJUST" in the "PICTURE MODE" menu (see page 33).
- Connect your DVD player directly to your TV. Connecting the DVD player through other video equipment will cause unwanted picture noise.

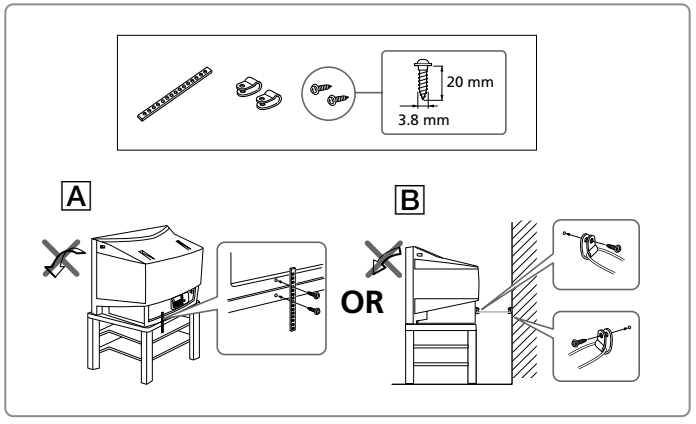
Securing the TV

To prevent the TV from falling, secure the TV using one of the following methods:

A With the supplied screws, attach the stabilizer band to the TV stand and to the rear of the TV using the provided hole.

OR

B Pass a cord or chain through the clamps and secure them to the rear of the TV and a wall or pillar.

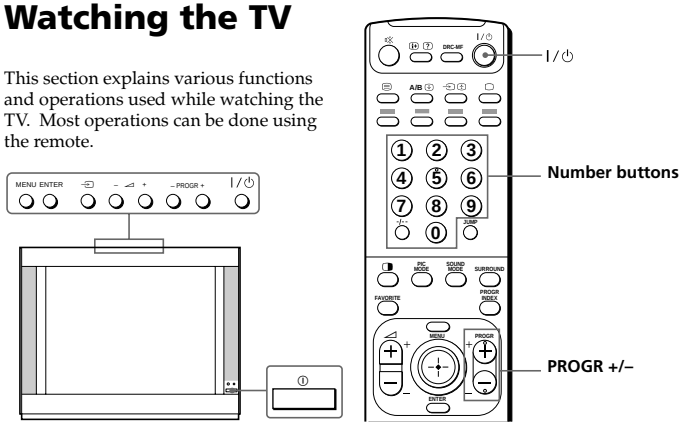


Note

- Use only the supplied screws. Use of other screws may damage the TV.

Watching the TV

This section explains various functions and operations used while watching the TV. Most operations can be done using the remote.

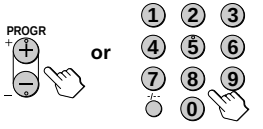


1 Press ⏻ to turn on the TV.

When the TV is in standby mode (the ⏻ indicator on the TV is lit red), press I/⏻ on the remote or on the TV.

2 Press PROGR +/– or the number buttons to select the TV channel.

For double digit numbers, press -/--, then the number (e.g., for 25, press -/--, then 2 and 5).



Note

- When you turn on the TV, either the program number or video mode is displayed for approximately 40 seconds. The ECO MODE (ECO) icon will also appear if "ECO MODE" in the "FEATURE" menu is set "ON" (see page 38).

To select a TV program quickly

(1) Press and hold PROGR +/–.
(2) Release PROGR +/– when the desired program number appears.

Note

- When you select a TV program quickly, the picture may be disrupted. This does not indicate a malfunction.

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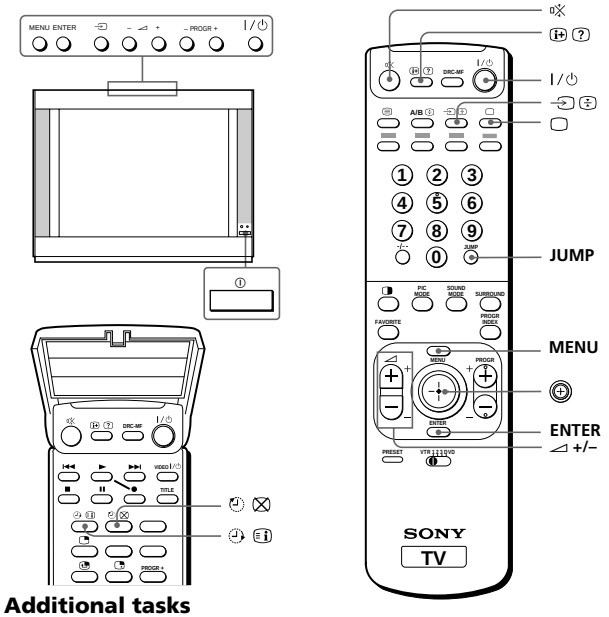


Additional tasks

To	Press
Turn off temporarily	I/⏻. The ⏻ indicator on the TV lights up red.
Turn off completely	⏻ on the TV.
Adjust the volume	+/–.
Mute the sound	🔇.
Watch the video input (VCR, camcorder, etc.)	⇒ (or ⇒ on the TV) to select "VIDEO 1", "VIDEO 2", "VIDEO 3", "VIDEO 4"or "DVD". To return to the TV screen, press ▢ (or ⇒ on the TV).
Jump back to the previous channel	JUMP.
Display the on-screen information*	i+.

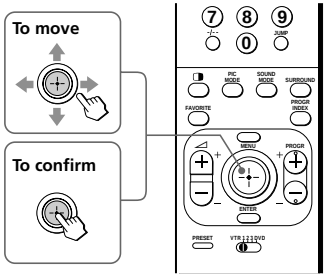
* Some picture/sound settings, and either the program number or video mode are displayed. The on-screen display for the picture/sound settings disappears after about 3 seconds.

continued

Using the Remote Control Button Joystick (⊕)

You can select the menu item on the screen by moving ⊕ up, down, left or right (see page 31).

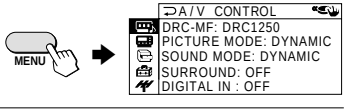
To confirm a selected item, press ⊕. You can also press ENTER on the remote to confirm a selected item.



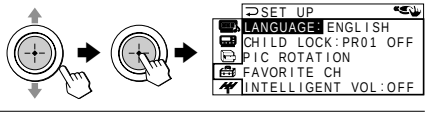
Changing the menu language

You can change the menu language as well as the on-screen language. For details on how to use the menu, see "Introducing the menu system" on page 29.

1 Press MENU.



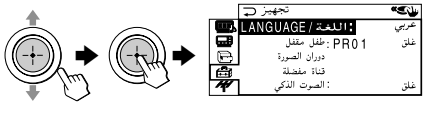
2 Move ⊕ up or down to select 🧰, then press ⊕.



3 Make sure "LANGUAGE" is selected then press ⊕.

4 Move ⊕ up or down to select the desired language (e.g., عربي), then press ⊕.

The selected menu language appears.



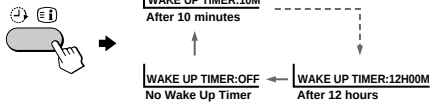
To return to the normal screen

Press MENU.

Setting the Wake Up timer

1 Press ⏲ until the desired period of time appears.

The Wake Up timer starts immediately after you have set it.



2 Select the TV channel or video mode you want to wake up to.

3 Press ⏻, or set the Sleep timer if you want the TV to turn off automatically.

The ⏲ indicator on the TV lights up orange.

To cancel the Wake Up timer

Press ⏲ until "WAKE UP TIMER: OFF" appears, or turn off the TV's main power.

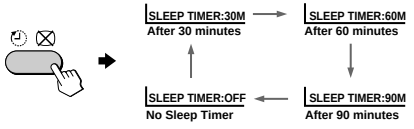
Note

- If no buttons or controls are pressed for more than two hours after the TV is turned on using the Wake Up timer, the TV automatically goes into standby mode. To resume watching the TV, press any button or control on the TV or the remote.

Setting the Sleep timer

Press ⏲ until the desired period of time appears.

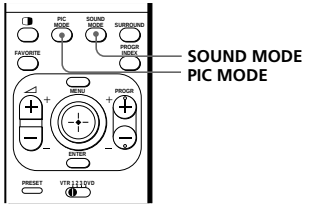
The Sleep timer starts immediately after you have set it.



To cancel the Sleep timer

Press ⏲ until "SLEEP TIMER: OFF" appears, or turn the TV off.

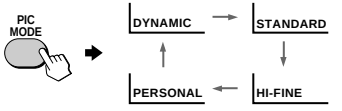
Selecting the picture and sound modes



You can select picture and sound modes and adjust the setting to your preference in the "PERSONAL" option.

Selecting the picture mode

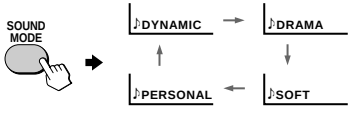
Press PIC MODE repeatedly until the desired picture mode is selected.



Select	To
"DYNAMIC"	receive high contrast pictures.
"STANDARD"	receive normal pictures.
"HI-FINE"	receive higher resolution pictures with mild contrast.
"PERSONAL"	receive the last adjusted picture setting from the "ADJUST" option in the "A/V CONTROL" menu (see page 33).

Selecting the sound mode

Press SOUND MODE repeatedly until the desired sound mode is selected.



Select	To
"DYNAMIC"	listen to dynamic and clear sound that emphasizes both the low and high tones.
"DRAMA"	listen to sound that emphasizes voice and high tones.
"SOFT"	receive soft sound.
"PERSONAL"	receive the last adjusted sound setting from the "ADJUST" option in the "A/V CONTROL" menu (see page 33).

Tip

- You can also set the picture and sound modes using the menu (see "Changing the "A/V CONTROL" setting" on page 32).

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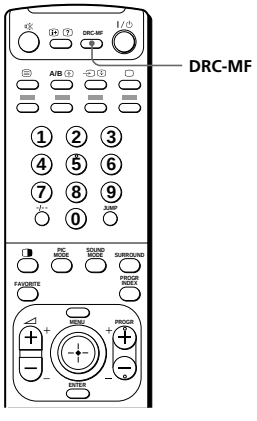
Viewing higher quality pictures

— "DRC-MF"

The Digital Reality Creation-Multi Function (DRC-MF) feature allows you to enjoy higher quality pictures on your TV. You can select "DRC1250" to watch super real (higher resolution) pictures, or "DRC100" to reduce flicker if necessary.



Press DRC-MF repeatedly until you receive the desired picture quality.

Select	To
"DRC1250"	select higher resolution pictures.
"DRC100"	reduce flicker on the screen.

Tip

- When the broadcast signal is weak, you may see some dots or noise on the TV screen. To reduce this interference, display the "A/V CONTROL" menu and select "ADJUST" in "PICTURE MODE", then adjust "SHARP" to reduce the sharpness (see page 33).

Note

- The DRC-MF mode is not selectable when using the "PROGRAM INDEX" or "FAVORITE" channel feature, or when the "GAME MODE", Picture-In-Picture ("PIP"), or "TWIN" mode is turned "ON".

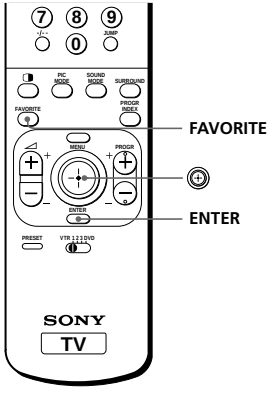
The DRC-MF logo (DRC-MF Digital Reality Creation) and "DRC-MF" are trademarks of Sony Corporation.

Viewing your favorite channels

— "FAVORITE CH"

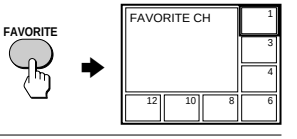
You can display seven favorite channels for quick and easy selection.

The last seven channels selected with the number buttons are displayed in "AUTO" mode. You can set up your own favorite channels in "MANUAL" mode under the "FAVORITE CH" menu (see "Changing the favorite channel setting" on page 41).

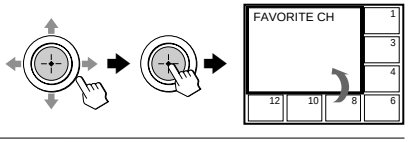


Selecting a favorite channel

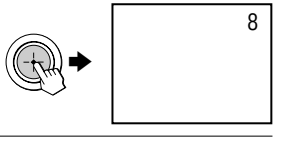
1 Press FAVORITE.



2 Move ⊕ up, down, left or right to select the desired channel (e.g. PR 8), then press ⊕.



3 Press ⊕ again.



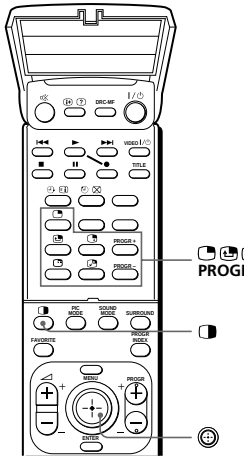
Note

- When you use your TV for the first time, seven preset channels appear.

Watching two programs at the same time

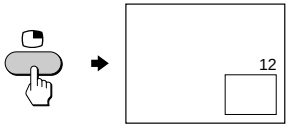
— "PIP", "TWIN"

With the Picture-in-Picture (PIP) or TWIN pictures features, you can display a different TV program or video within or beside the main picture.



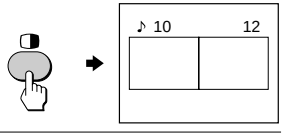
Displaying the PIP screen

Press .



Displaying TWIN pictures

Press .



To return to the normal screen

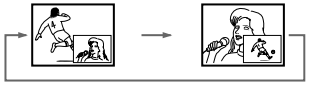
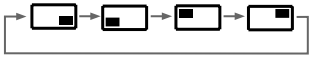
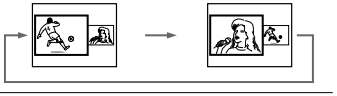
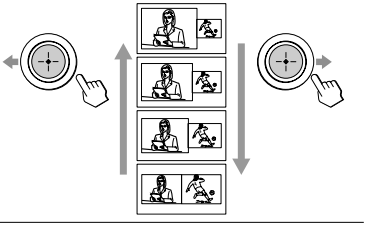
Press (when in the PIP screen) or (when in the TWIN picture screen).

Tip

- You can also display the PIP screen or TWIN pictures using the menu (see "Changing the MULTI PICTURE setting" on page 35).

continued

Additional PIP/TWIN pictures tasks

To	Press/Move
change a TV program in the PIP screen or in the right TWIN picture	Press PROGR + or PROGR –. For a video input, press .
swap pictures between the main and PIP screens	Press . 
freeze the PIP screen	Press . To unfreeze the screen, press the button again.
change the position of the PIP screen	Press . 
swap the right and left pictures of the TWIN pictures	Press . 
change the screen size of the TWIN pictures	Move left to increase the left screen size. Move right to increase the right screen size. 

Notes

- The button does not function in the TWIN pictures mode.
- When you display a video input on the PIP screen at a faster/slower speed, the picture may be disrupted depending on the VCR type.
- If you display different color systems on the main screen and the PIP screen, the size of the PIP screen may be different and the PIP picture may be disrupted. This does not indicate a malfunction of the TV.
- In the TWIN picture screen, you can only operate and hear the sound of the main left screen (♪ appears on the screen).
- When the button is pressed, the TV screen flickers or goes blank for about one second before the TWIN pictures appear. This does not indicate a malfunction of the TV.

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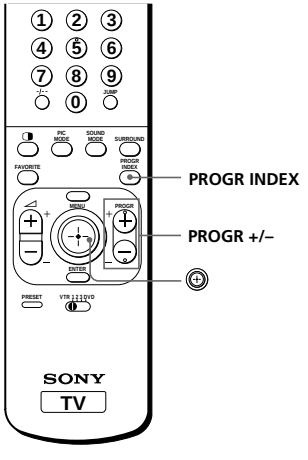
Displaying multiple programs

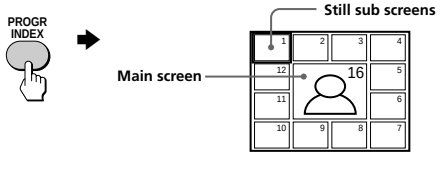
— "PROGRAM INDEX"

The PROGRAM INDEX feature displays all of the preset TV programs on twelve or seven sub screens for direct selection.

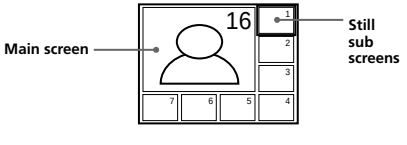


Press PROGR INDEX.

The first twelve preset programs appear one by one, clockwise from the upper left corner.



When the number of the preset TV programs is less than eight, the first seven preset programs appear one by one, clockwise from the upper right corner.



Tip

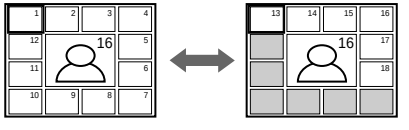
- When you press the PROGR INDEX button in the TWIN pictures mode, the left picture appears as the main screen of the PROGRAM INDEX mode.

continued

To view the next or the previous twelve preset programs

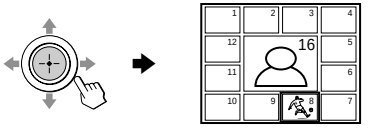
This works only when the number of the preset TV programs is more than twelve.

Press PROGR +/– on the remote or the TV.

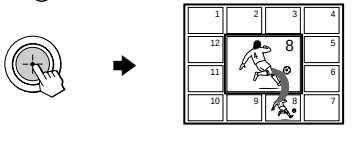


To select the desired program directly from the sub screens

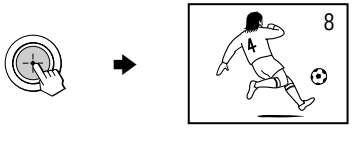
1 Move ⊕ up, down, left or right to move the frame to the screen of the program you want to watch.



2 Press ⊕.



3 Press ⊕ again.



Tip

- Pressing the number buttons directly displays the program.

To return to the normal screen

Press PROGR INDEX again, or:

1 Select "PROGRAM INDEX" from the "MULTI PICTURE" menu.
2 Press ⊕.

Tip

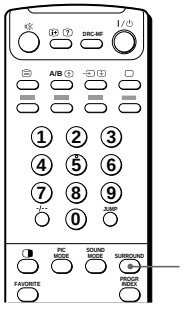
- You can also display multiple programs using the menu (see "Changing the MULTI PICTURE setting" on page 35).

Note

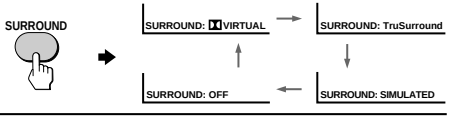
- When displaying multiple programs, only the sound of the main screen is heard.

Listening with surround sound

The surround feature enables you to enjoy the sound effects of a concert hall or movie theater.



Press SURROUND repeatedly until you receive the desired surround sound.



Select	To
"DD VIRTUAL"	listen to Dolby* Surround encoded sound.
"TruSurround"	listen to the surround sound that spreads out to the rear of a room.
"SIMULATED"	listen to monaural sound with a stereo-like effect.
"OFF"	turn off the surround sound.

Notes

- The Virtual Dolby Surround of this model consists of Dolby Digital, Dolby Pro Logic and TruSurround.
- The "DD VIRTUAL" (Virtual Dolby Digital) is only available when receiving a Dolby Digital signal through the DIGITAL IN (component video input) jack at the rear of your TV and "DIGITAL IN: ON" in the "A/V CONTROL" menu is selected (see pages 7 and 32).
- When using the DIGITAL IN (component video input) jack at the rear of your TV, the available surround modes depend on the type of digital signal being received.
- SIMULATED uses SRS (MONO).

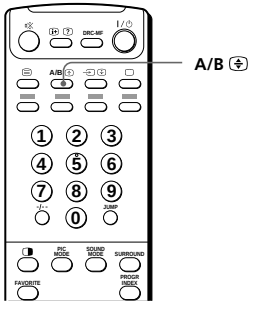
* Manufactured under license from Dolby Laboratories Licensing Corporation. DOLBY, the double-D symbol DD and "PRO LOGIC" are trademarks of Dolby Laboratories Licensing Corporation.

"TruSurround™" is a trademark of SRS Labs, Inc. SRS and the SRS symbol are registered trademarks of SRS Labs, Inc. in the United States and selected foreign countries. SRS and TruSurround are incorporated under license from SRS Labs, Inc. and are protected under United States Patent Nos.4,748,669 and 4,841,572 with numerous additional issued and pending foreign patents".

Enjoying stereo or bilingual programs

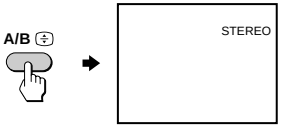
(KV-ES29M90 only)

You can enjoy stereo sound or bilingual programs of NICAM and A2 (German) stereo systems.



Press A/B repeatedly until you receive the sound you want.

The on-screen display changes to show the selected sound and the ⊂⊃ indicator on the TV lights up red.



When receiving a NICAM program

Broadcasting	On-screen display (Selected sound)
NICAM stereo	NICAM (Stereo sound) → MONO (Regular sound)
NICAM bilingual	NICAM MAIN (Main sound) → NICAM SUB (Sub sound) → MONO (Regular sound)
NICAM monaural	NICAM MAIN (Main sound) → MONO (Regular sound)

continued

When receiving an A2 (German) program

Broadcasting	On-screen display (Selected sound)
A2 (German) stereo	MONO (Regular sound) → STEREO (Stereo sound)
A2 (German) bilingual	MAIN (Main sound) → SUB (Sub sound)

Receiving area for NICAM and A2 (German) programs

System	Receiving area
NICAM	Hong Kong, Singapore, New Zealand, Malaysia, Thailand, etc.
A2 (German)	Australia, Malaysia, Thailand, etc.

Notes

- If the signal is very weak, the sound becomes monaural automatically.
- If the stereo sound is noisy when receiving a NICAM program, select "MONO". The sound becomes monaural, but the noise is reduced.
- Before receiving a NICAM stereo program in China, please check the NICAM broadcast condition at your area. When receiving a NICAM stereo program, the receiving conditions might vary depending on area. In addition, different strength of the NICAM broadcast signal might affect the receiving quality.

If the sound is distorted or noisy when receiving a monaural program through the ⅂ (antenna) terminal

Press A/B repeatedly until "MONO" appears on the screen.

To cancel the monaural sound setting, press A/B again until "AUTO" appears on the screen.

MONO → AUTO

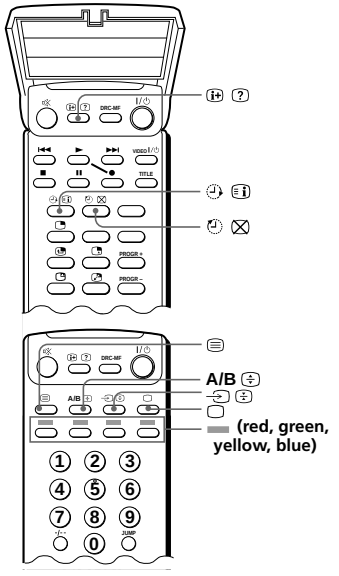
Notes

- The "MONO" or "AUTO" setting is memorized for each program position.
- You cannot receive a stereo broadcast signal when the TV is in the "MONO" setting. Normally, set the TV to "AUTO".

Viewing Teletext

(KV-ES29M81only)

Some TV stations broadcast an information service called Teletext which allows you to receive various information, such as stock market reports and news.

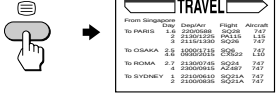


Displaying Teletext

1 Select a TV channel that carries the Teletext broadcast you want to watch.

2 Press ▤ to display the text.

A Teletext page (normally the index page) is displayed. If there is no Teletext broadcast, "100?" is displayed at the top left corner of the screen after approximately 10 seconds.



To turn off Teletext

Press ▢.

continued

Viewing Teletext (continued)

Additional Teletext tasks

To	Do this
display a Teletext page on the TV picture	Press ▤. Each time you press ▤, the screen changes as follows: Teletext → Teletext and TV → TV.
check the contents of a Teletext service	Press ▤. An overview of the Teletext contents, including page numbers, appears on the screen.
select a Teletext page	Press the number buttons to enter the three-digit page number of the desired Teletext page.* If you make a mistake, reenter the correct page number. To access the next or previous page, press PROGR +/–.
hold (pause) a Teletext page (stop the page from scrolling)	Press ⊕ to display the symbol "⊕" at the top left corner of the screen. To resume normal Teletext viewing, press ⊕ or ▤.
reveal concealed information (e.g., an answer to a quiz)	Press ?. To conceal the information, press the button again.
enlarge the Teletext display	Press ⊕. Each time you press ⊕, the Teletext display changes as follows: Enlarge upper half → Enlarge lower half → Normal size.
stand by for a Teletext page while watching a TV program	1 Enter the Teletext page number that you want to refer to, then press ⊠. 2 When the page number is displayed, press ▤ to show the text.

* You can also select a Teletext page of any page number that appears in the colored column at the bottom of the screen using the corresponding color-coded button on the remote.

Using FASTEXT

This feature allows you to quickly access a Teletext page that uses FASTEXT. When a FASTEXT program is broadcast, colored menus appear at the bottom of the screen. The color of each menu corresponds to the color-coded buttons on the remote (red , green , yellow , and blue).

To access a FASTEXT menu

Press the color-coded button on the remote corresponding to the menu you want. The menu page appears on the screen after a few seconds.

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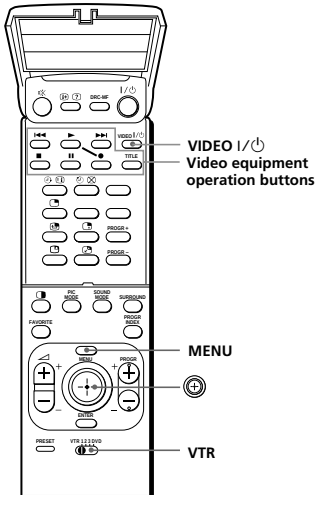
Operating optional components

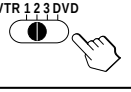
You can use the supplied remote to operate Sony video equipment such as Beta, 8 mm, VHS or DVD.



Setting up the remote to work with other connected equipment

Switch VTR to select the desired equipment type (see the chart below).

For example, to operate a Sony 8 mm VCR:



To control	Select
DVD	DVD
VTR1 (Beta)	1
VTR2 (8 mm)	2
VTR3 (VHS)	3

Notes

- If your video equipment is furnished with a COMMAND MODE selector, set this selector to the same position as the VTR switch.
- If the equipment does not have a certain function, the corresponding button on the remote will not operate.

continued

Operating a VCR using the remote

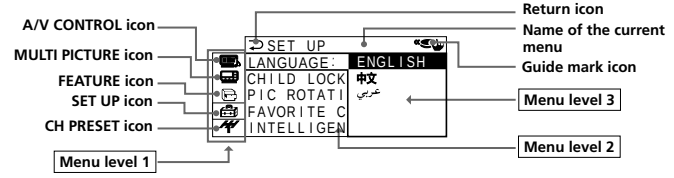
To	Press
turn on/off	VIDEO I/⏻
record	► while pressing ●.
play	►
stop	■
fast forward (▶▶)	▶▶I
rewind the tape (◀◀)	I◀◀
pause	❚❚ Press again to resume normal playback.
search the picture forward (▶▶) or backward (◀◀)	▶▶I or I◀◀ during playback. Release to resume normal playback.

Operating a DVD player using the remote

To	Press
turn on/off	VIDEO I/⏻
play	►
stop	■
pause	❚❚ Press again to resume normal playback.
step through different tracks of an audio disc	▶▶I to step forward or I◀◀ to step backward.
display the title menu	TITLE
display the menu	MENU while holding down ●.
select the menu item	Move ⊕ up, down, left or right while holding down ●.

Introducing the menu system

The MENU button lets you open a menu and change the settings of your TV. The following is an overview of the menu system.



Level 1	Level 2	Level 3/Function
"A/V CONTROL"	"DRC-MF"	Select the "DRC-MF" mode: "DRC1250" → "DRC100"
	"PICTURE MODE"	Select the picture mode: "DYNAMIC" → "STANDARD" → "HI-FINE" → "PERSONAL" → "ADJUST"
	"ADJUST"	Adjust the "PERSONAL" option: "PICTURE" → "COLOR" → "BRIGHT" → "HUE" → "SHARP"
	"SOUND MODE"	Select the sound mode: "DYNAMIC" → "DRAMA" → "SOFT" → "PERSONAL" → "ADJUST"
	"ADJUST"	Adjust the "PERSONAL" option: "BASS" → "TREBLE" → "BALANCE" → "BBE"*
	"SURROUND"	Select the "SURROUND" mode: "□□ VIRTUAL" → "TruSurround" → "SIMULATED" → "OFF"
	"DIGITAL IN"	Activate or deactivate the digital audio input jack at the rear of your TV.
"MULTI PICTURE"	"PIP"	Activate or deactivate the PIP feature.
	"PIP POSITION"	Change the position of the sub screen.
	"SWAP"	Swap the pictures between the main and sub screens.
	"TWIN"	Display a TV program or video beside the main screen.
	"PROGRAM INDEX"	Display all the preset TV programs at the same time.
"FEATURE"	"WIDE MODE"	Activate or deactivate WIDE MODE feature.
	"ECO MODE"	Activate or deactivate ECO MODE feature.
	"GAME MODE"	Activate or deactivate GAME MODE feature.

continued

Introducing the menu system (continued)

Level 1	Level 2	Level 3/Function
"SET UP"	"LANGUAGE"	Change the menu language: "ENGLISH" → "中文" (Chinese) → "عربي" (Arabic)
	"CHILD LOCK"	Lock out specific channels.
	"PIC ROTATION"	Rotate the picture.
	"FAVORITE CH"	Set favorite channels.
	"INTELLIGENT VOL"	Adjust the volume automatically.
"CH PRESET"	"AUTO PROGRAM"	Preset channels automatically.
	"MANUAL PROGRAM"	Preset channels manually.
	"SKIP"	Skip unwanted or unused program numbers.
	"TV SYS"	Select the TV system: "B/G" → "I" → "D/K" → " M"
	"COL SYS"	Select the color system: "AUTO" →" PAL" → "SECAM" → "NTSC3.58" → "NTSC4.43"

* The BBE is manufactured by Sony Corporation under license from BBE Sound, Inc. It is covered by U.S. Patent No. 4,638,258 and No. 4,482,866. The word "BBE" and the BBE symbol are the trademarks of BBE Sound, Inc.

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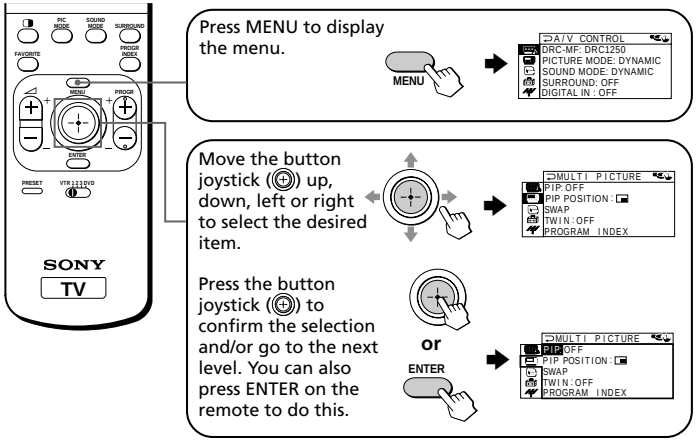
How to use the menu


Press MENU to display the menu.
MENU
A/V CONTROL
DRC-MF: DRC1250
PICTURE MODE: DYNAMIC
SOUND MODE: DYNAMIC
SURROUND: OFF
DIGITAL IN : OFF
Move the button joystick (⊕) up, down, left or right to select the desired item.
MULTI PICTURE
PIP: OFF
PIP POSITION :
SWAP
TWIN: OFF
PROGRAM INDEX
Press the button joystick (⊕) to confirm the selection and/or go to the next level. You can also press ENTER on the remote to do this.
or
ENTER
SONY
TV

Other menu operations

To	Press/Move
Adjust the setting value	Move ⊕ up, down, left or right.
Move to the next/previous menu level	Move ⊕ left or right.
Cancel the menu	Press MENU.

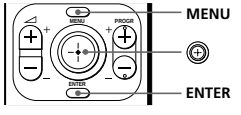
Tips

- If you want to exit from Menu level 2 to Menu level 1, move ⊕ up or down until the return icon (⮌) is highlighted, then press ⊕ or ENTER.
- The MENU, ENTER, and ◿ +/– buttons on the TV can also be used for the operations above.

Note

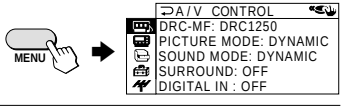
- If more than 60 seconds elapse between entries, the menu screen automatically disappears.

Changing the "A/V CONTROL" setting

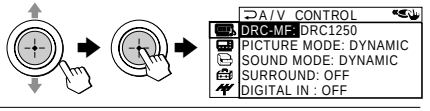


The "A/V CONTROL" menu allows you to adjust the picture and sound settings.

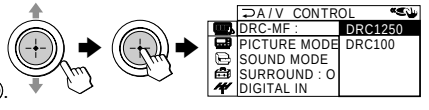
1 Press MENU.



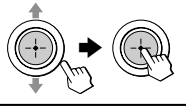
2 Move ⊕ up or down to select , then press ⊕.



3 Move ⊕ up or down to select either "DRC-MF", "PICTURE MODE", "SOUND MODE", "SURROUND", or "DIGITAL IN", then press ⊕.



4 Move ⊕ up or down to select the desired option, then press ⊕.



For	Select
"DRC-MF"	either "DRC1250" or "DRC100".
"PICTURE MODE"	either "DYNAMIC", "STANDARD", "HI-FINE", "PERSONAL"*, or "ADJUST".
"SOUND MODE"	either "DYNAMIC", "DRAMA", "SOFT", "PERSONAL"*, or "ADJUST".
"SURROUND"	either "▯▯ VIRTUAL", "TruSurround", "SIMULATED", or " OFF".
"DIGITAL IN"	either "ON" or "OFF".

* When the "PERSONAL" mode is selected, the last adjusted picture/sound settings from the "ADJUST" option are received (see page 33).

Tip

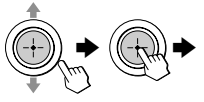
- For details on the options under the "DRC-MF", "PICTURE MODE"/ "SOUND MODE", "SURROUND" and "DIGITAL IN" modes, see pages 15, 14, 22 and 34 respectively.

To return to the normal screen

Press MENU.

Adjusting the "ADJUST" options under "PICTURE MODE"

1 Move ⊕ up or down to select the desired item (e.g., "COLOR"), then press ⊕.



2 Adjust the value according to the following table, then press ⊕.

For	Move ⊕ down or left to	Move ⊕ up or right to
"PICTURE"	decrease picture contrast	increase picture contrast
"COLOR"	decrease color intensity	increase color intensity
"BRIGHT"	darken the picture	brighten the picture
"HUE"*	increase red picture tones	increase green picture tones
"SHARP"	soften the picture	sharpen the picture

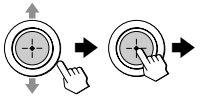
* You can adjust "HUE" for the NTSC color system only.

3 Repeat the above steps to adjust other items.

The adjusted settings will be received when you select "PERSONAL".

Adjusting the "ADJUST" options under "SOUND MODE"

1 Move ⊕ up or down to select the desired item (e.g., "BALANCE"), then press ⊕.



2 Adjust the value according to the following table, then press ⊕.

For	Move ⊕
"BASS"	down or left to decrease the bass, up or right to increase the bass.
"TREBLE"	down or left to decrease the treble, up or right to increase the treble.
"BALANCE"	down or left to increase the left speaker's volume, up or right to increase the right speaker's volume.
"BBE"	up or down to select "HIGH", "LOW", or "OFF". "BBE" can produce clear sound.

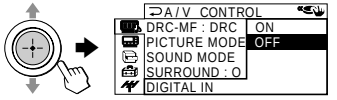
3 Repeat the above steps to adjust other items.

The adjusted settings will be received when you select "PERSONAL".

continued

Setting the "DIGITAL IN" options

1 In the "DIGITAL IN" menu, move ⊕ up or down to select the desired option (see table below).



Select	To
"ON"	receive digital audio signal through DIGITAL IN (component video input) jack.
"OFF"	receive analog audio signal through L and R (component video input) jack.

2 Press ⊕ to confirm the selected option.

Note

- Your TV can only receive Dolby Digital or Linear PCM format digital signals through the DIGITAL IN (component video input) jack (see page 7). Receiving any other format digital signal may cause unwanted noise or no sound from the speakers.

Tip

- For details on the menu system and how to use the menu, refer to "Introducing the menu system" on page 29.

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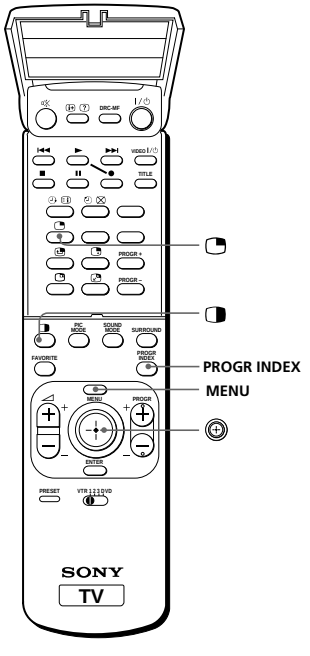
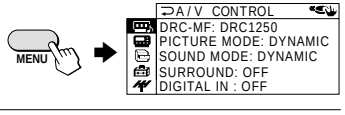
Changing the "MULTI PICTURE" setting

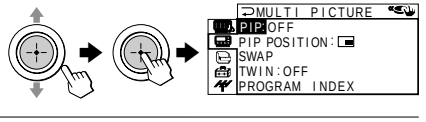
The "MULTI PICTURE" menu allows you to use the Picture-in-Picture (PIP), TWIN pictures, or PROGRAM INDEX features.



1 Press MENU.



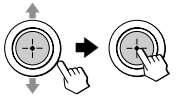
2 Move ⊕ up or down to select , then press ⊕.

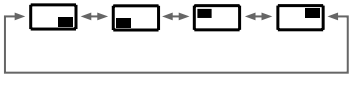


continued

Changing the "MULTI PICTURE" setting (continued)

3 Move ⊕ up or down to select the desired option (see the table below), then press ⊕.



Select	To
"PIP"	display the PIP screen within the main picture. Move ⊕ up or down to select "ON", then press ⊕. To cancel, press ◔ or select "OFF", then press ⊕.
"PIP POSITION"	change the position of the PIP screen. Move ⊕ up or down to select the desired position, then press ⊕. 
"SWAP"	swap the main and PIP screens, or right and left pictures of the TWIN pictures.
"TWIN"	display a different TV program or video beside the main picture. Move ⊕ up or down to select "ON", then press ⊕. To cancel, press ◑ or select "OFF", then press ⊕.
"PROGRAM INDEX"	view multiple programs on the sub-screens. To cancel, press PROGR INDEX.

To return to the normal screen

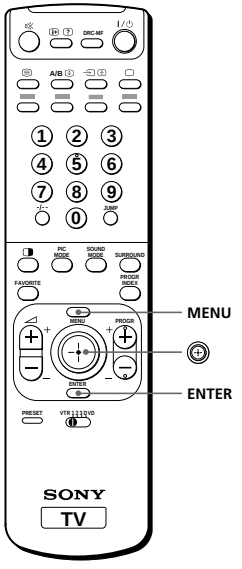
Press MENU.

Tip

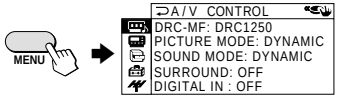
- For details on the menu system and how to use the menu, see "Introducing the menu system" on page 29.

Changing the "FEATURE" setting

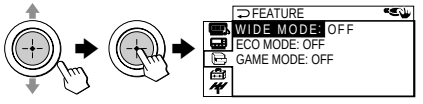
The "FEATURE" menu allows you to change the size of the picture on the screen when receiving wide mode (16:9) picture signals. You can also adjust the picture setting that is suitable for viewing video games, and reduce the power consumption of your TV.



1 Press MENU.



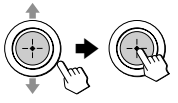
2 Move ⊕ up or down to select 🖼, then press ⊕.

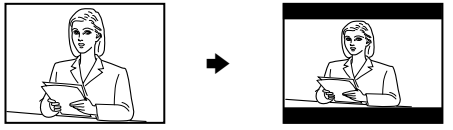


continued

Changing the "FEATURE" setting (continued)

3 Move ⊕ up or down to select the desired option (see the table below), then press ⊕.



Select	To
"WIDE MODE"	change the size of the picture when receiving wide-mode (16:9) picture signal. Move ⊕ up or down to select "ON", then press ⊕.  To restore the normal picture size, select "OFF" then press ⊕.
"ECO MODE"	reduce power consumption of your TV to save energy. Move ⊕ up or down to select "ON", then press ⊕. To cancel, select "OFF", then press ⊕.
"GAME MODE"	adjust the picture setting that is suitable to view video games. Move ⊕ up or down to select "ON", then press ⊕. To cancel, select "OFF", then press ⊕.

Notes

- When you turn on "ECO MODE", the picture may become dimmer. Turning "ECO MODE" off will restore the picture to its original setting.
- "WIDE MODE" and "GAME MODE" is available only when receiving signals through the → (video input), → (S video input), or → (component video input) jacks at the side and rear of your TV.
- If "ECO MODE" is on, the ECO MODE (ECO) icon will appear at the bottom right corner of the screen when you turn on the TV or when you press i on the remote (see pages 10 and 11).

To return to the normal screen

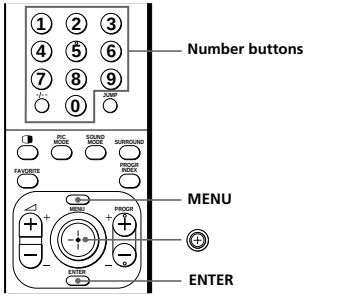
Press MENU.

Tip

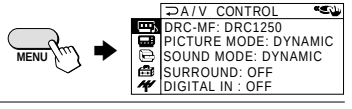
- For details on the menu system and how to use the menu, see "Introducing the menu system" on page 29.

Changing the "SET UP" setting

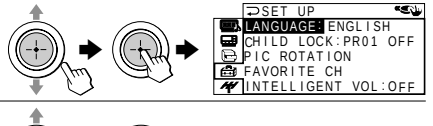
The "SET UP" menu allows you to: change the menu language, block channels, adjust the picture position, program your favorite channels, and adjust the volume automatically.



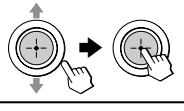
1 Press MENU.

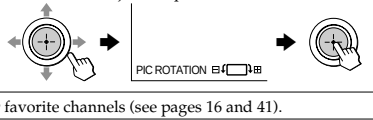


2 Move ⊕ up or down to select 🚗, then press ⊕.



3 Move ⊕ up or down to select the desired option, then press ⊕.



Select	To
"LANGUAGE"	change the menu language (see page 12).
"CHILD LOCK"	block channels (see page 40).
"PIC ROTATION"	adjust the picture position when it is not aligned with the TV screen. Move ⊕ up or right to adjust the position clockwise, then press ⊕. Move ⊕ down or left to adjust the position counterclockwise, then press ⊕. 
"FAVORITE CH"	select your favorite channels (see pages 16 and 41).
"INTELLIGENT VOL"	adjust the volume of all TV program automatically. Move ⊕ up or down to select "ON", then press ⊕. To cancel, select "OFF", then press ⊕.

To return to the normal screen

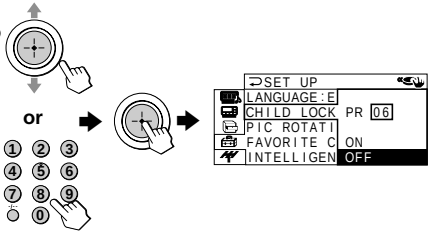
Press MENU.

continued

Changing the "SET UP" setting (continued)

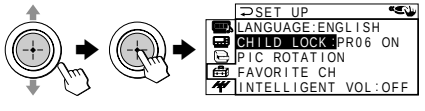
Blocking channels ("CHILD LOCK")

1 After selecting "CHILD LOCK", either move ⊕ up or down, or press the number buttons (or PROGR +/–) to select the desired channel (e.g. PR 06), then press ⊕.

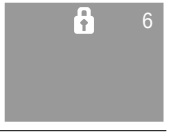


2 Move ⊕ up or down to select "ON", then press ⊕. To unlock the channel, select "OFF".

The lock symbol (🔒) appears on the screen when "ON" is selected.



If a locked channel is selected, the lock symbol appears on the screen.



3 Repeat steps 1 and 2 to lock other channels.

To return to the normal screen

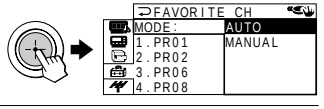
Press MENU.

Note

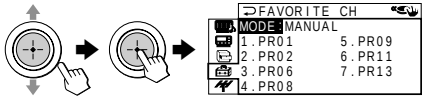
- If you preset a locked channel, that channel will be unlocked (see page 42).

Changing the favorite channel setting

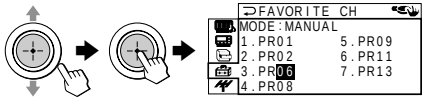
1 After selecting "FAVORITE CH", make sure "MODE" is selected, then press ⊕.



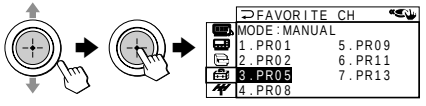
2 Move ⊕ up or down to select "MANUAL", then press ⊕.



3 Move ⊕ up or down to select the program you want to change, then press ⊕.



4 Move ⊕ up or down to change the number, then press ⊕.



5 Repeat steps 3 and 4 to set other channels.

To return to the normal screen

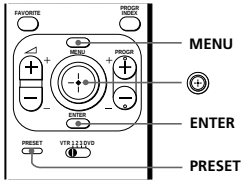
Press MENU.

Note

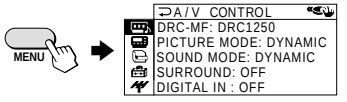
- If you press the PROGR +/– buttons or number buttons in step 4 above, the TV will display the channel immediately.

Changing the "CH PRESET" setting

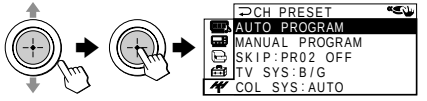
The "CH PRESET" menu allows you to adjust the setup of your TV. For example, you can manually tune in a channel with a weak signal that fails to be tuned in by automatic presetting.



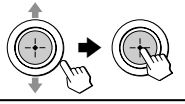
1 Press MENU.



2 Move ⊕ up or down to select ✓, then press ⊕.



3 Move ⊕ up or down to select the desired option, then press ⊕.



Select	To
"AUTO PROGRAM"	preset channels automatically.
"MANUAL PROGRAM"	preset channels manually. See "Presetting channels manually" on page 43.
"SKIP"	skip unwanted or unused channels. 1 Either move ⊕ up or down, or press the number buttons (or PROGR +/–) until the unused or unwanted channel number appears, then press ⊕. 2 Select "ON", then press ⊕. 3 To disable other channels, repeat steps 1 and 2. To restore the skipped channel, select "OFF" in step 2.
"TV SYS"	select the TV system.
"COL SYS"	select the color system. Normally, set this to "AUTO".

To return to the normal screen

Press MENU.

Tip

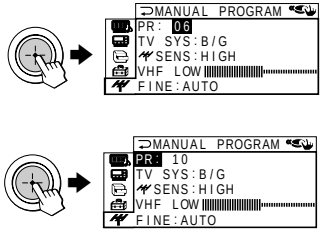
- For details on the menu system and how to use the menu, refer to "Introducing the menu system" on page 29.

Presetting channels manually

1 After selecting "MANUAL PROGRAM", select the program number to which you want to preset a channel.

(1) Make sure "PR" is selected, then press ⊕.

(2) Move ⊕ up or down until the program number you want to preset (e.g., program number "10") appears on the menu, then press ⊕.



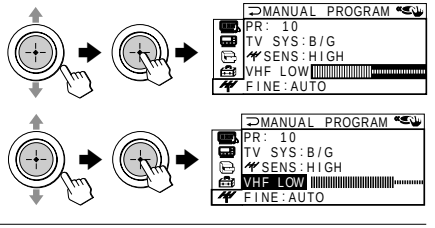
Tips

- You can also select the "MANUAL PROGRAM" menu directly by pressing the PRESET button on the remote.
- You can also select the program number with the PROGR +/– or number buttons.

2 Select the desired channel.

(1) Move ⊕ up or down to select either "VHF LOW", "VHF HIGH", or "UHF", then press ⊕.

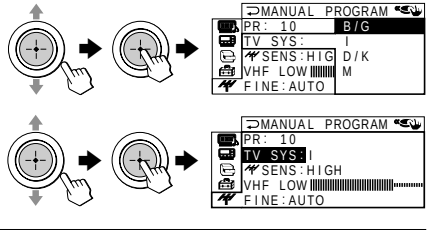
(2) Move ⊕ up or down until the desired channel's broadcast appears on the TV screen, then press ⊕.



3 If the sound of the desired channel is abnormal, select the appropriate TV system.

(1) Move ⊕ up or down to select "TV SYS", then press ⊕.

(2) Move ⊕ up or down until the sound becomes normal, then press ⊕.



continued

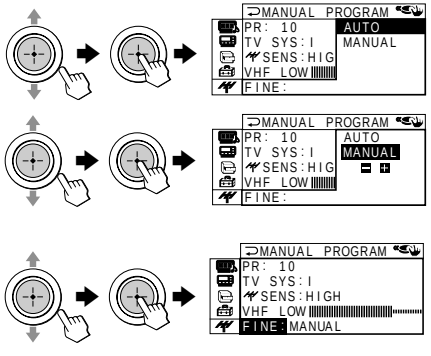
Changing the "CH PRESET" setting (continued)

4 If you are not satisfied with the picture and sound quality, you may be able to improve them by using the "FINE" tuning feature.

(1) Move ⊕ up or down to select "FINE", then press ⊕.

(2) Move ⊕ up or down to select "MANUAL", then press ⊕.

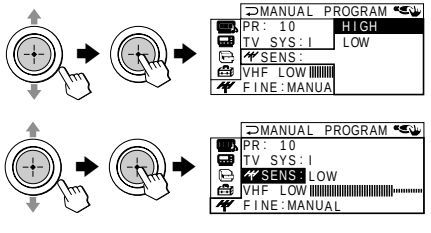
(3) Move ⊕ either up, down, left or right until the picture and sound quality are optimal, then press ⊕. The + or – icon on the menu flashes while tuning.



5 If the TV signal is too strong and the picture is distorted, you can adjust the TV reception sensitivity.

(1) Move ⊕ up or down to select "SENS", then press ⊕.

(2) Move ⊕ up or down to select "LOW", then press ⊕.



To return to the normal screen

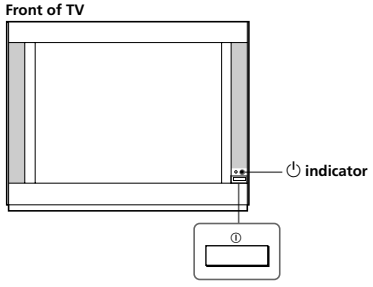
Press MENU.

Notes

- The TV system ("TV SYS") and the TV reception sensitivity ("SENS") settings are memorized for each program number.
- If you preset a locked channel, that channel will be unlocked (see page 40).

Self-diagnosis function

Your TV is equipped with a self-diagnosis function. If there is a problem with your TV, the ⏻ (standby) indicator flashes red. The number of times the ⏻ indicator flashes indicates the possible causes.



1 Check that the ⏻ indicator flashes red a number of times between 3-second intervals.

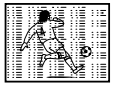
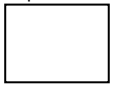
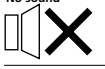
2 Count the number of times the ⏻ indicator flashes.

3 Press ⏀ (main power) to turn off your TV.

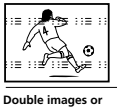
4 Inform your nearest Sony service center about the number of times the ⏻ indicator flashed.
Be sure to note the model name and serial number located on the rear of your TV.

Troubleshooting

If you have any problem while viewing your TV, please check the following troubleshooting guide. If the problem persists, contact your Sony dealer.

Symptom	Possible cause	Solutions	Page
Snowy picture  Noisy sound	• The connection is loose or the cable is damaged.	• Check the antenna cable and connection on the TV, VCR and at the wall.	4
	• Channel presetting is inappropriate or incomplete.	• Press the PRESET button to display the “MANUAL PROGRAM” menu and preset the channel again.	43
	• The antenna type is inappropriate.	• Check the antenna type (VHF/UHF). Contact a Sony dealer for advice.	–
	• The antenna direction needs adjustment.	• Adjust the antenna direction. Contact a Sony dealer for advice.	–
	• Signal transmission is low.	• Try using a booster.	–
Distorted picture Noisy sound	• Broadcast signals are too strong.	• Press the PRESET button to display the“MANUAL PROGRAM” menu. Then, select “ SENS: LOW”. • Turn off or disconnect the booster if it is in use.	44 –
Good picture Noisy sound	• The TV system setting is inappropriate.	• If the sound of all the channels are noisy, display the “CH PRESET” menu and select “AUTO PROGRAM” to preset the channels again. • If the sound of some channels is noisy, select the channel, then display the “CH PRESET” menu and select the appropriate TV system (“TV SYS”).	42 43
	• The digital audio signal is inappropriate.	• Set “DIGITAL IN: OFF” in the “A/V CONTROL” menu and connect L and R (component video input) on your TV to receive analog audio signals.	7, 34
No picture  No sound 	• The power cord, antenna or VCR is not connected.	• Check the power cord, antenna and the VCR connections.	4
	• The TV is not turned on.	• Press I/⏻ (power). • Press ⏀ (main power) on the TV to turn off the TV for about five seconds, then turn it on again.	10 11

KV-ES29M80/ES29M81/ES29M90
RM-916

Symptom	Possible cause	Solutions	Page
Good picture 	• The volume level is too low.	• Press + to increase the volume level.	11
	• The sound is muted.	• Press to cancel the muting.	11
No sound 	• The broadcast signal has a transmission problem.	• Press A/B until a better sound is heard.	23
	• The digital audio signal is inappropriate.	• Set "DIGITAL IN: OFF" in the "A/V CONTROL" menu and connect L and R (component video input) on your TV to receive analog audio signals.	7, 34
	• The "DIGITAL IN" setting in the "A/V CONTROL" menu is inappropriate.	• When connecting to (component video input) on your TV, set "DIGITAL IN: ON" to receive digital audio signals through DIGITAL IN, or set "DIGITAL IN: OFF" to receive analog audio signals through L and R.	34
Dotted lines or stripes 	• There is local interference from cars, neon signs, hair dryers, power generators, etc.	• Do not use a hair dryer or other equipment near the TV. • Adjust the antenna direction for minimum interference. Contact a Sony dealer for advice.	– –
Double images or "ghosts" 	• Broadcast signals are reflected by nearby mountains or buildings.	• Use a highly directional antenna. • Use the fine tuning ("FINE") function.	– 44
	• The antenna direction needs adjustment.	• Adjust the antenna direction. Contact a Sony dealer for advice.	–
	• Use of a booster is inappropriate.	• Turn off or disconnect the booster if it is in use.	–
No color 	• The color level setting is too low.	• Display the "A/V CONTROL" menu and select "ADJUST" of "PICTURE MODE", then adjust the "COLOR" level.	33
	• The color system setting is inappropriate.	• Display the "CH PRESET" menu and check the color system ("COL SYS") setting (usually set this to "AUTO").	42
	• The antenna direction needs adjustment.	• Adjust the antenna direction. Contact a Sony dealer for advice.	–
Abnormal color patches 	• The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV.	• Locate external speakers or other equipment away from the TV. Do not move the TV while the TV is turned on. Press ⏻ (main power) on the TV to turn off the TV for about five minutes, then turn it on again.	–

continued

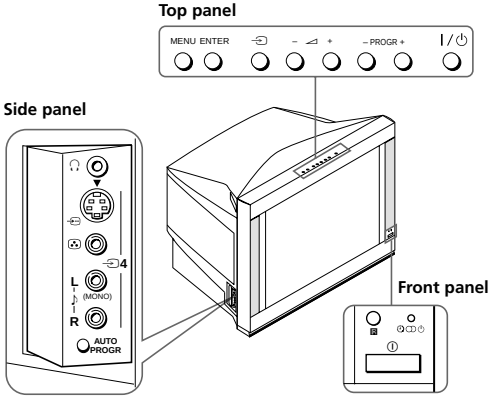
Troubleshooting (continued)

Symptom	Possible cause	Solutions	Page
TV cannot receive stereo broadcast signal. (not used in these models)	• The stereo reception setting is inappropriate.	• Press A/B until "AUTO" appears on the screen.	23
Stereo broadcast sound switches on and off or is distorted. **or** **The sound switches between stereo and monaural frequently. (not used in these models)**	• The connection is loose or the cable is damaged.	• Check the antenna cable and connection on the TV, VCR and on the wall.	4
	• The antenna direction needs adjustment.	• Adjust the antenna direction. Contact a Sony dealer for advice.	–
	• The broadcast signal has a transmission problem.	• Press A/B until a better sound is heard.	23
"100?" appears at the top of the screen after approximately 10 seconds and there is no Teletext display. (KV-ES34M81 only)	• The channel carries no Teletext broadcast.	—	25
Teletext display is incomplete (snowy picture or double images). (KV-ES34M81 only)	• Connection is loose or the cable is damaged.	• Check the antenna cable and connection on the TV, VCR, and at the wall.	4
	• The antenna direction is inappropriate.	• Adjust the antenna direction. Contact a Sony dealer for advice.	–
	• Signal transmission is too low.	• Try using a booster. • Use the fine tuning (FINE) function.	– 44
Picture slant 	• Terrestrial magnetism is affecting your TV set.	• Display the "SET UP" menu and adjust "PIC ROTATION" so that the picture is aligned to the TV screen.	39
Lines moving across the TV screen.	• There is interference from external sources, e.g., heavy machineries, nearby broadcast station.	• Use the fine tuning ("FINE") function.	44
The ⏻ indicator on your TV flashes red a number of times between 3-second intervals.	• Your TV may need servicing.	• Contact your nearest Sony service center.	45

Symptom	Possible cause	Solutions	Page
TV cabinet creaks.	• Changes in room temperature sometimes make the TV cabinet expand or contract, causing a noise. This does not indicate a malfunction.	—	–
A small "boom" sound is heard when the TV is turned on.	• The TV's demagnetizing function is working. This does not indicate a malfunction.	—	–
Static discharge is felt when touching the TV cabinet.	• This is the same static discharge that is felt when touching metal door handles or car doors especially when the air is dry, for example in winter. This does not indicate a malfunction.	—	–

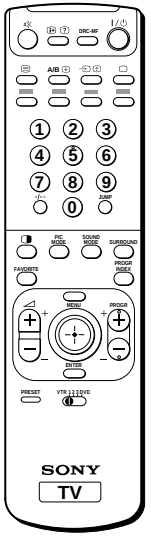
Identifying parts and controls

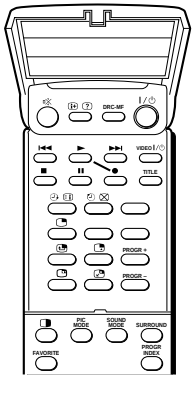
Front, top and side panels



Button	Function	Page
Side panel		
🎧	Headphone jack.	–
AUTO PROGR	Preset channels automatically.	5
Front panel		
⏻	Turn off completely or turn on the TV.	10
Top panel		
I/⏻	Turn off temporarily or turn on the TV.	10
PROGR +/–	Select program number.	10
+/–	Adjust volume.	11
	Select TV or video input.	11
ENTER	Confirm selected items.	31
MENU	Display the menu.	31

Remote control





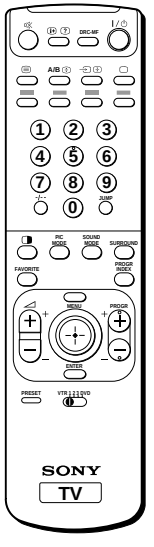
The names/symbols of buttons on the remote are indicated in different colors to represent the available functions.

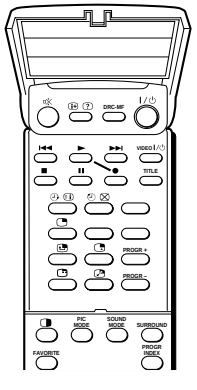
Label color	Button function
White	For general TV operations
Green	For Teletext operations
Yellow	For PIP operations

Button	Function	Page
I / ⏻	Turn off temporarily or turn on the TV.	10
PROGR +/–	Select program number.	10
0 – 9, -/--	Input numbers.	10
ⓘ	Display on-screen information.	11
🔇	Mute the sound.	11
▢	Display the TV program.	11
⇥	Select TV or video input.	11
◿ +/–	Adjust volume.	11
JUMP	Jump to previous channel.	11
Timer operations		
⏲	Set TV to turn on automatically.	13
⏲	Set TV to turn off automatically.	13
SOUND MODE	Select sound mode.	14
PIC MODE	Select picture mode.	14
DRC-MF	Select DRC-MF mode.	15
Favorite Channel operations		
FAVORITE	Display favorite channels.	16
◎	Select desired channel.	16
PIP and Twin picture operations		
◔	Display the PIP screen.	17
◑	Display TWIN pictures.	17
◎	Adjust Twin picture size.	18
PROGR +/ PROGR –	Change program in PIP/ Twin picture.	18
◔	Select video input for PIP/ Twin picture.	18
◔	Swap main and PIP/Twin picture.	18
◔	Freeze PIP screen.	18
◔	Adjust position of PIP screen.	18

continued

Identifying parts and controls (continued)

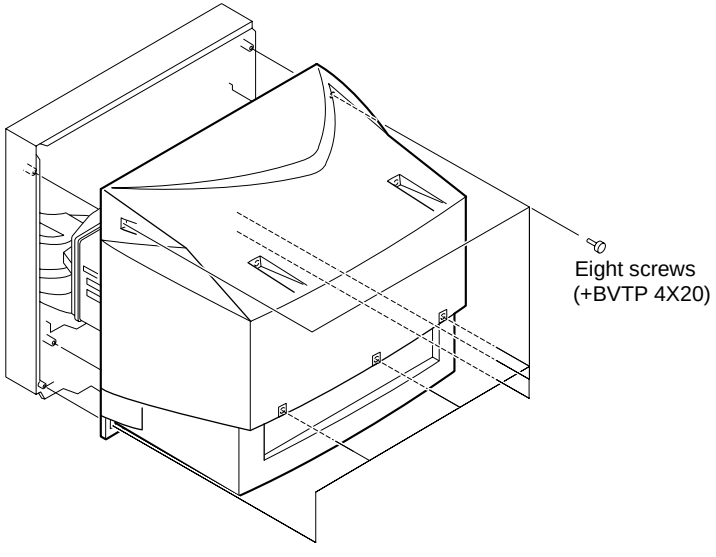




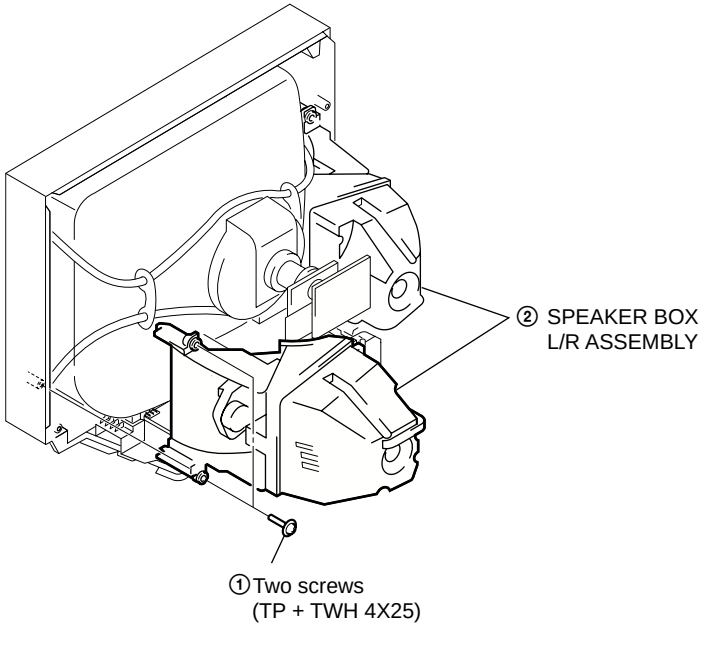
Button	Function	Page
Program Index operations		
PROGR INDEX	Display all preset TV programs.	19
PROGR +/–	View next/previous 12 TV programs.	20
◎	Select desired channel.	20
SURROUND	Select surround mode.	22
Stereo/bilingual operations (not used in these models)		
A/B	Select stereo/bilingual mode.	23
Teletext operations (KV-ES29M81 only)		
▤	Display Teletext broadcast.	25
▤	Display Teletext service contents.	26
⤓	Stop Teletext page from scrolling.	26
?	Reveal concealed information.	26
⤒	Enlarge the Teletext display.	26
⊠	Show TV screen while waiting for Teletext page.	26
0 - 9	Input Teletext page number.	26
PROGR +/–	Display the next or previous page.	26
▬ (red, green, yellow, blue)	Access a FASTEXT menu.	26
Optional components operations		
VTR	Set up the remote.	27
VIDEO I / ⏻	Power.	28
TITLE	Display the title menu.	28
►	Play.	28
►►I	Fast forward/Search forward.	28
I◄◄	Rewind/Search backward.	28
●	Record.	28
■	Stop.	28
❚❚	Pause.	28
Menu operations		
MENU	Display the menu.	31
◎	Select, adjust and confirm selected items.	31
ENTER	Confirm selected items.	31
PRESET	Display “MANUAL PROGRAM” menu.	43

SECTION 2
DISASSEMBLY

2-1. REAR COVER REMOVAL

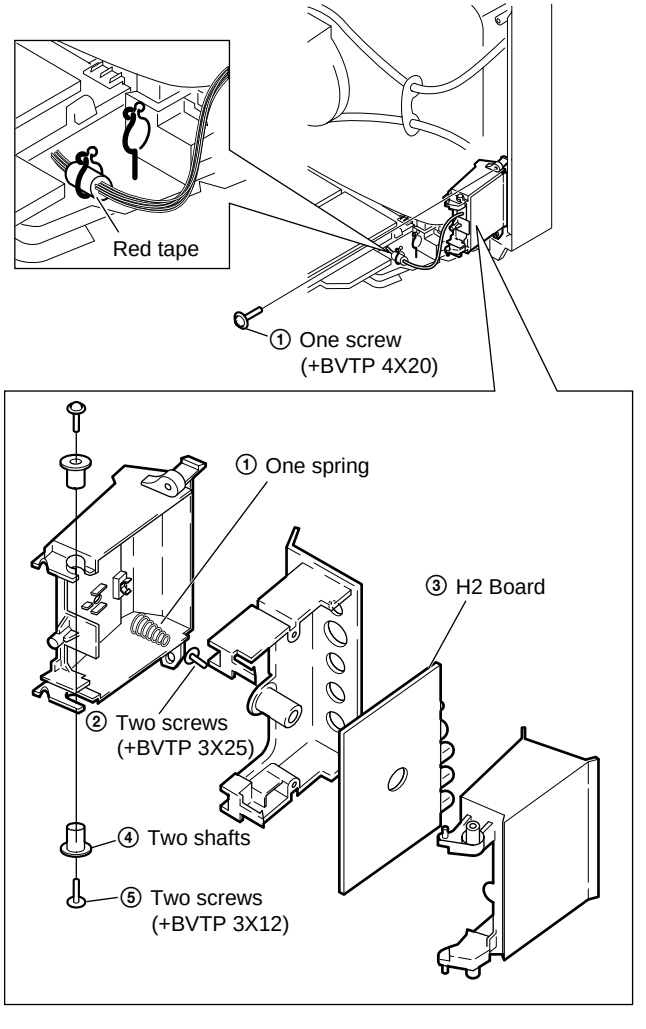


2-2. SPEAKER BOX REMOVAL

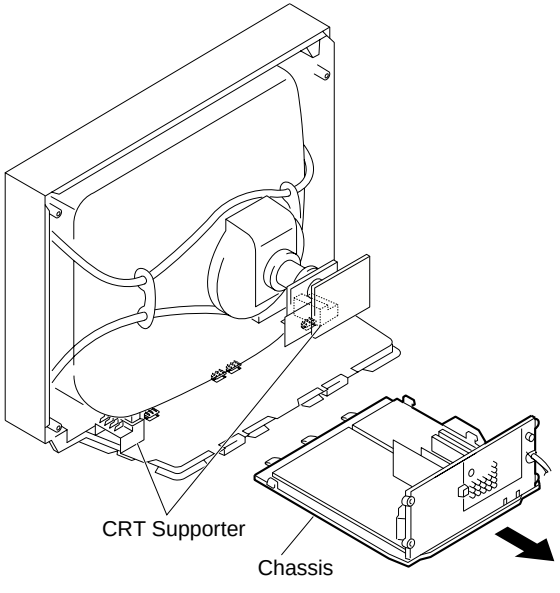


2-3. H2 BOARD REMOVAL

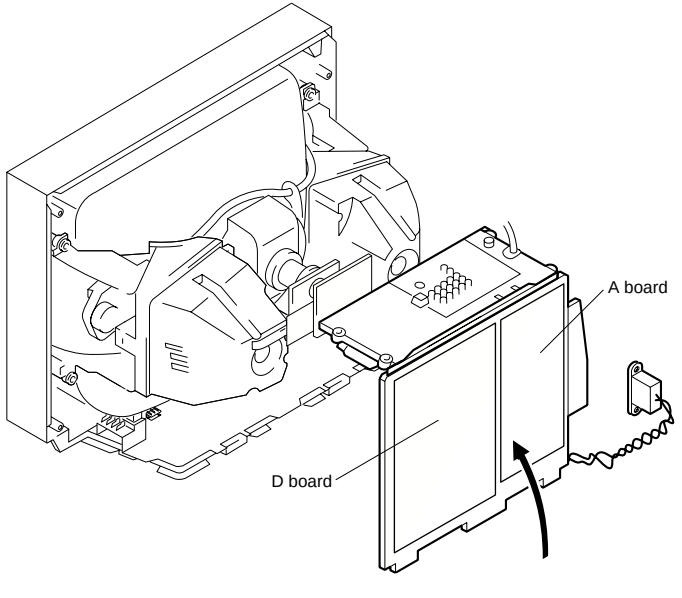
Caution: Please make sure that the red colour taped point is just placed with the purse lock when treating the leads to H2 board. If lead treatment is wrongly arranged, it will affect the door opening and closing malfunction.



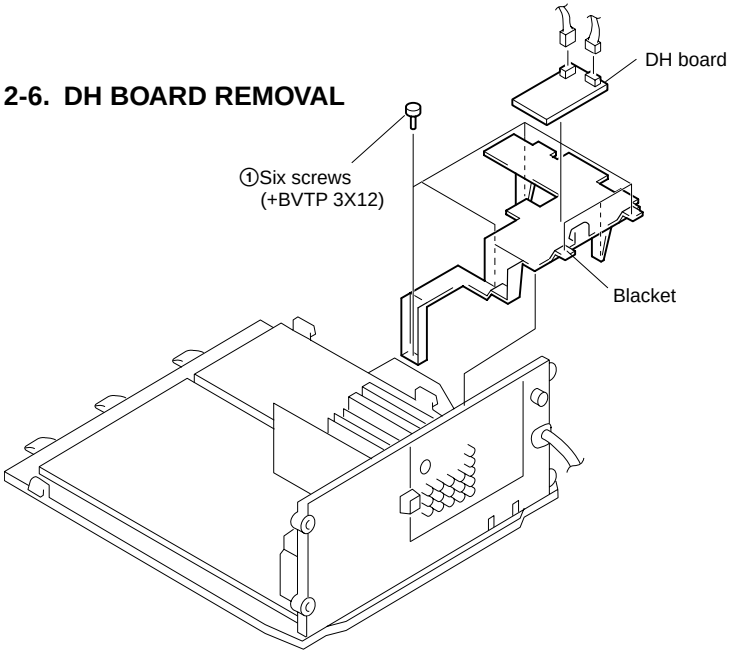
2-4. CHASSIS ASSY REMOVAL



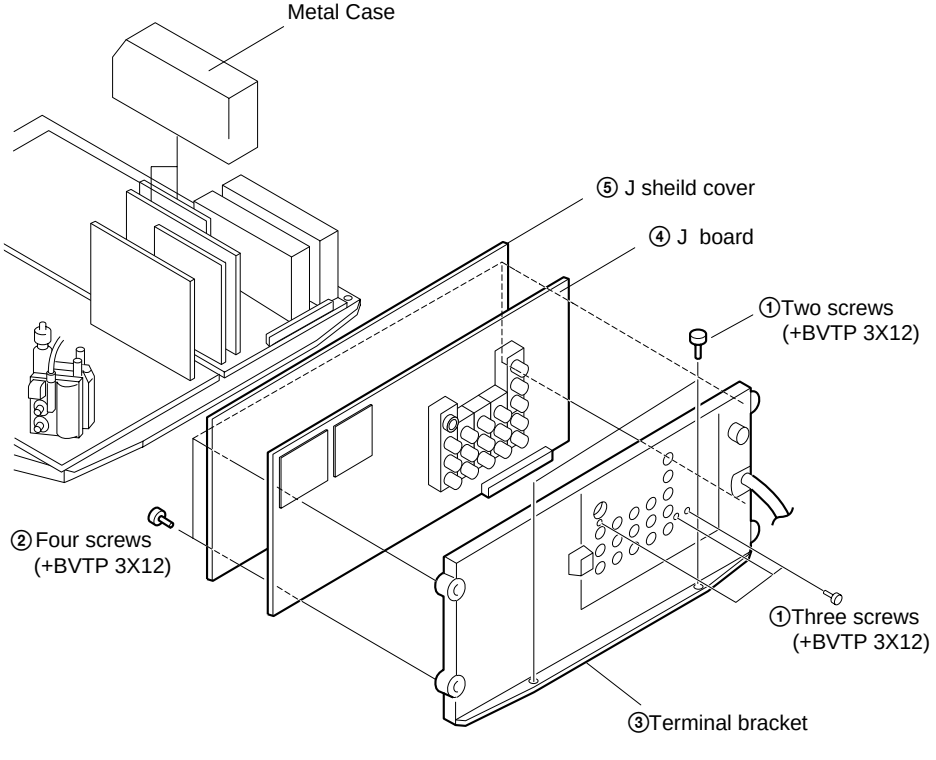
2-5. SERVICE POSITION



2-6. DH BOARD REMOVAL

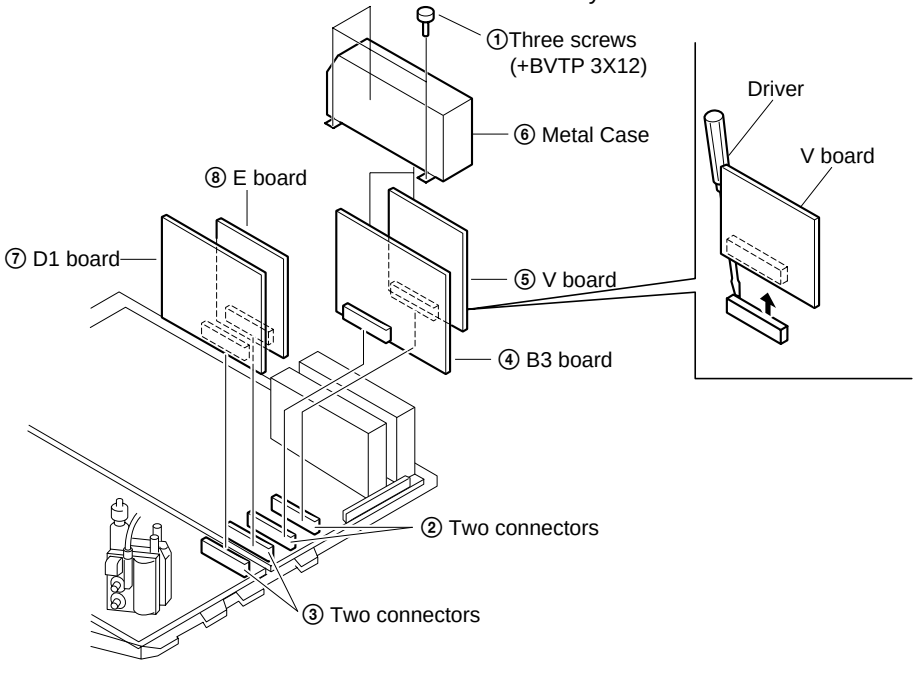


2-7. J BOARD REMOVAL

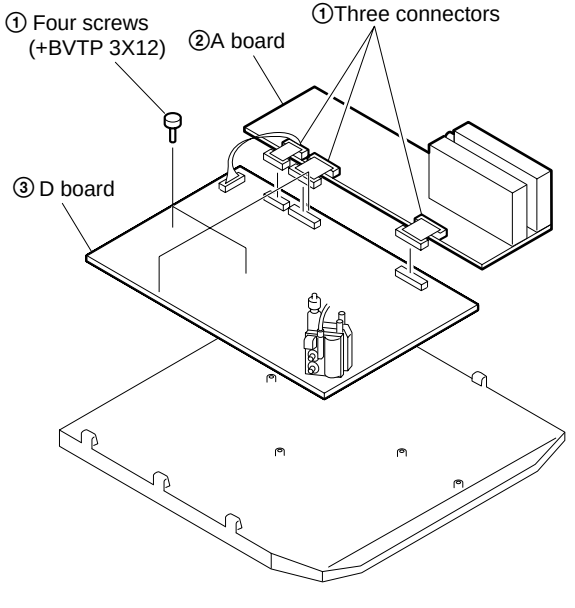


2-8. B3, D1 AND E BOARDS REMOVAL

NOTE : V Board is used for model KV-ES29M81 only.

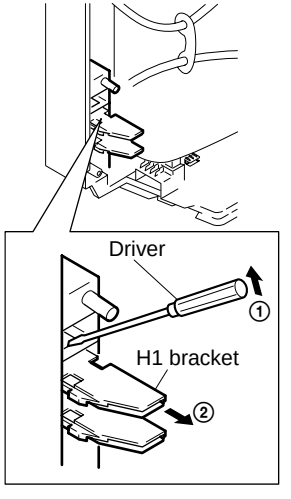


2-9. A AND D BOARDS REMOVAL



2-10. H1 BOARD REMOVAL

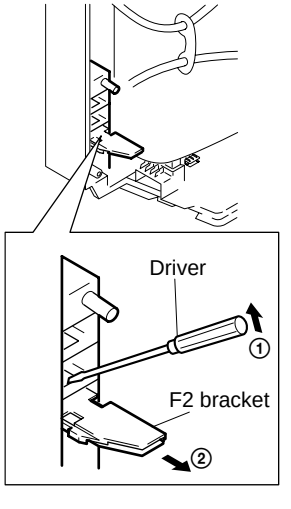
NOTE : Push the hook down using the tip of a screwdriver and at the same time pull the H1 bracket.



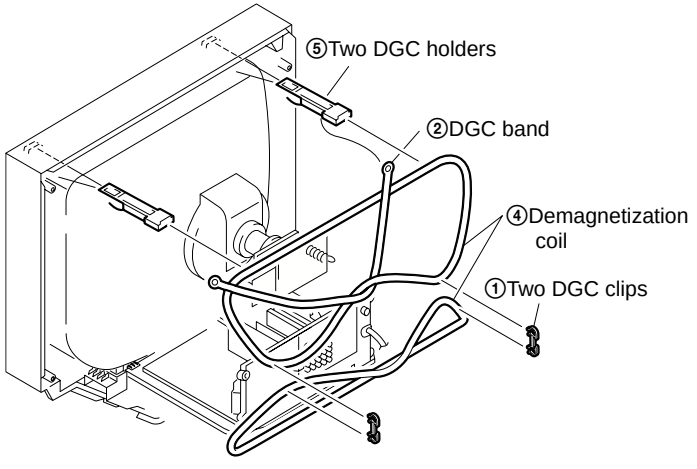
2-11. F2 BOARD REMOVAL

NOTE : To remove F2 board, firstly remove the H1 board. Then, push the hook down using the tip of a screwdriver and at the same time pull the F2 bracket.

Caution : When removing the F2 board, please turn off the main AC supply.

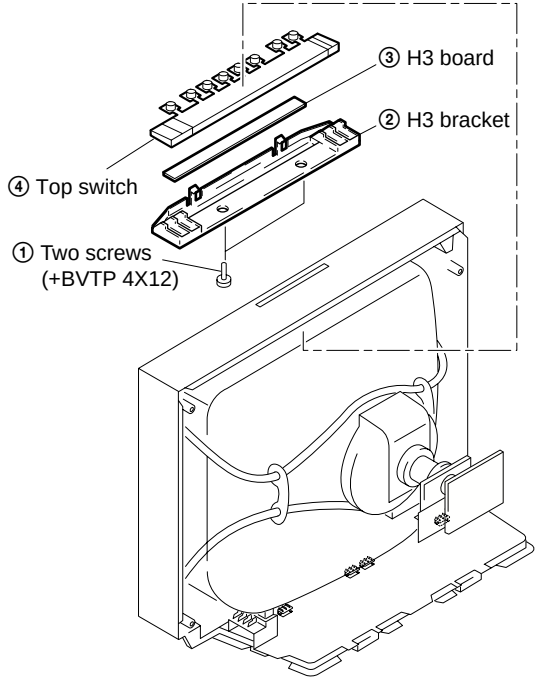


2-12. DEMAGNETIZATION COIL REMOVAL



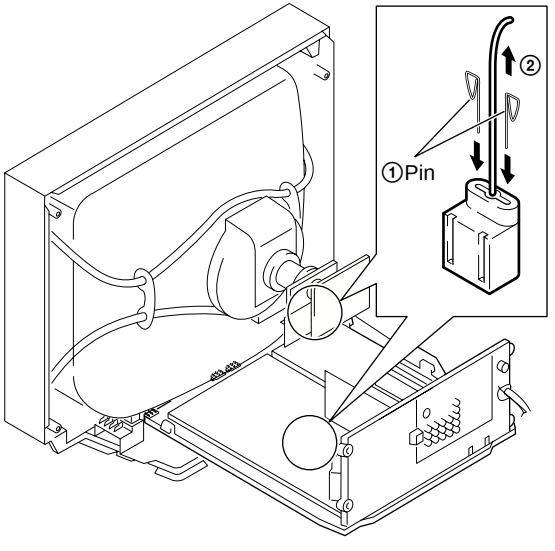
2-13. TOP SWITCH REMOVAL (H3 BOARD REMOVAL)

NOTE : To remove H3 board, the CRT has to be removed first.



2-14. G2 LEAD REMOVAL

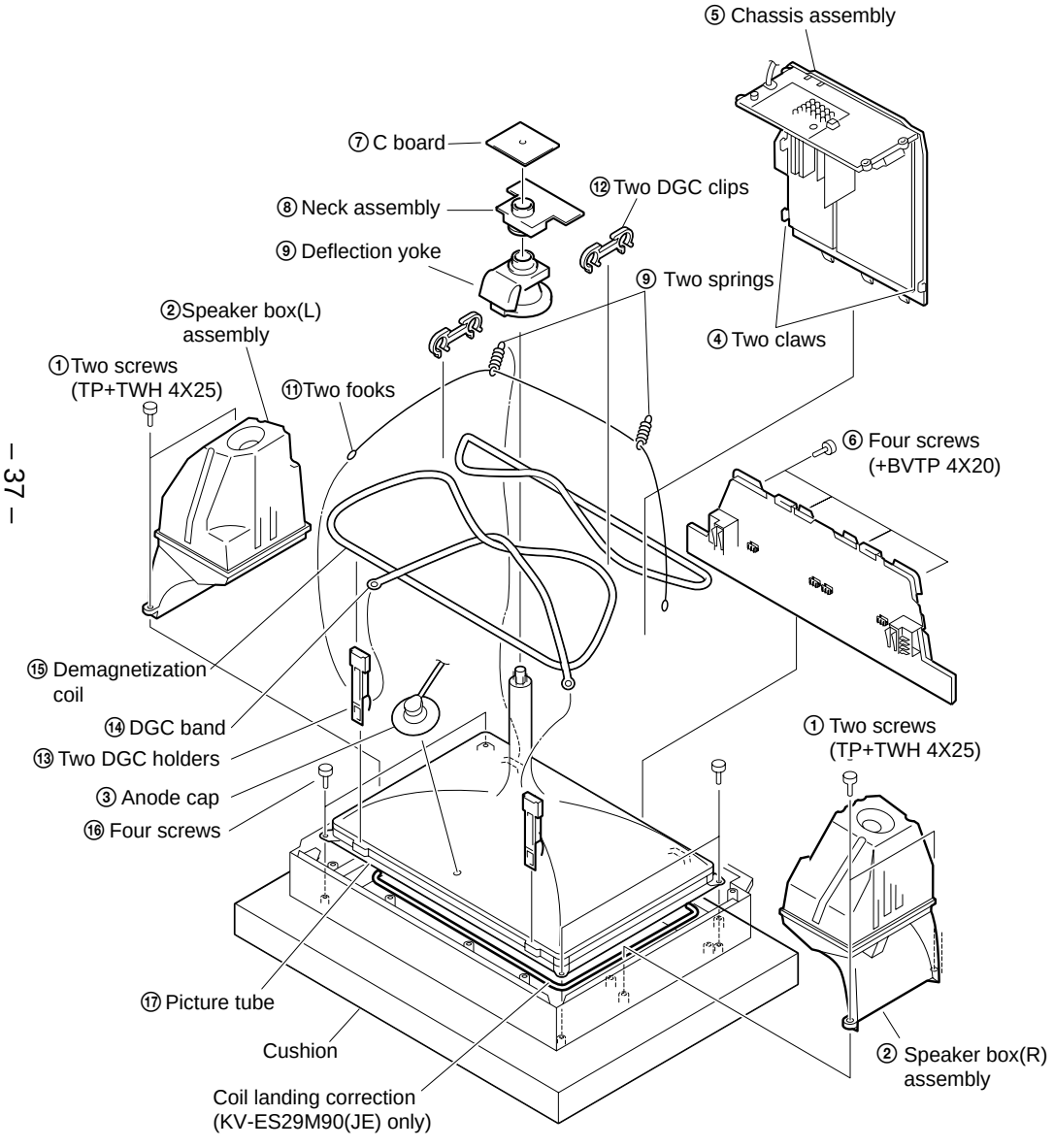
NOTE : Insert pin to both edge holes on socket and release the lock.



2-15. PICTURE TUBE REMOVAL

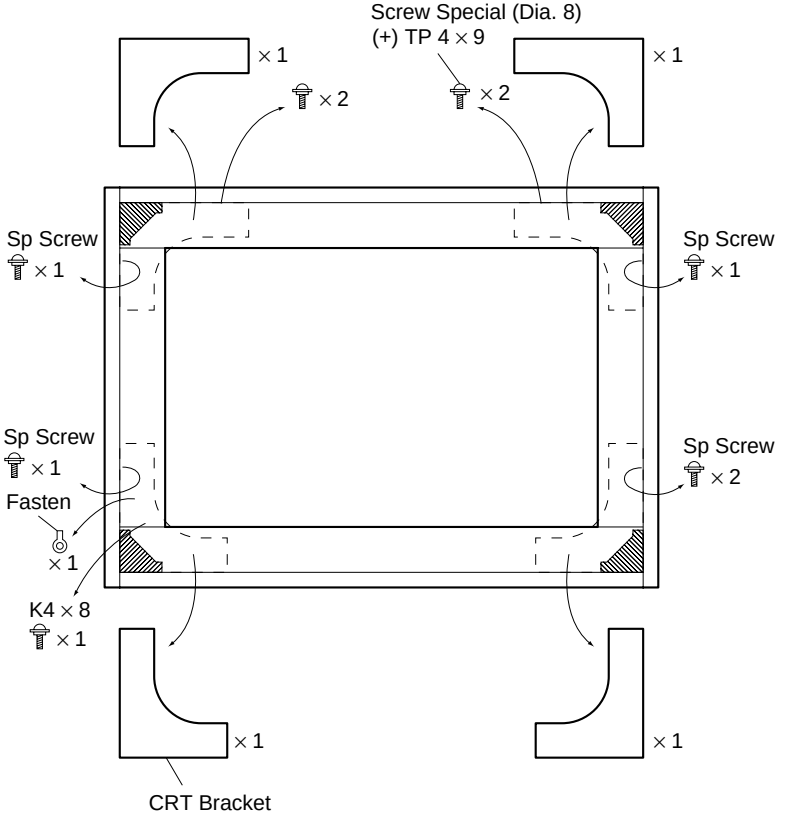
NOTE :i) Prior to picture tube removal, please remove the front cover first.

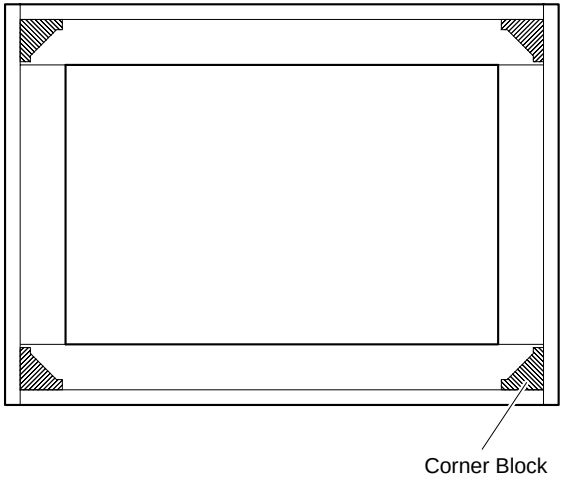
Caution : Aluminium frame is easily scratched if extra caution is not taken when handling it.



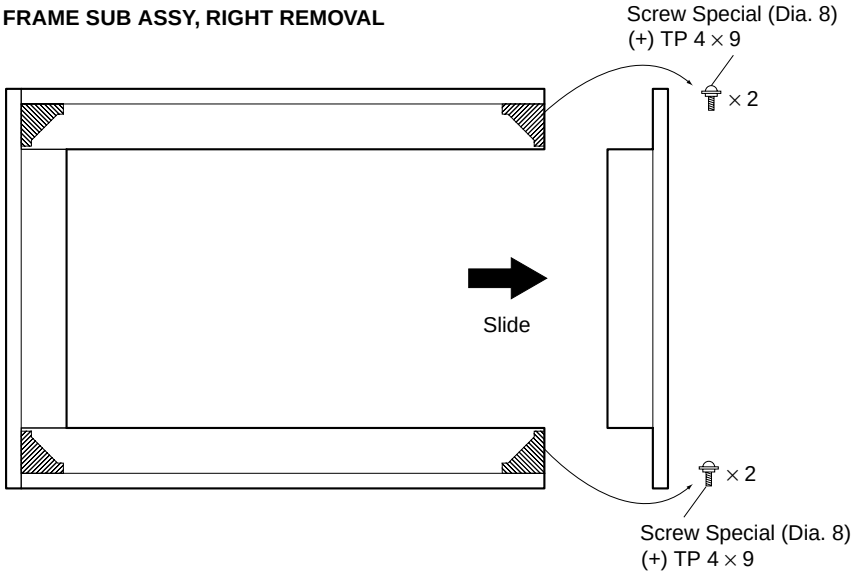
2-16. FRAME SUB-ASSY DISASSEMBLY

①

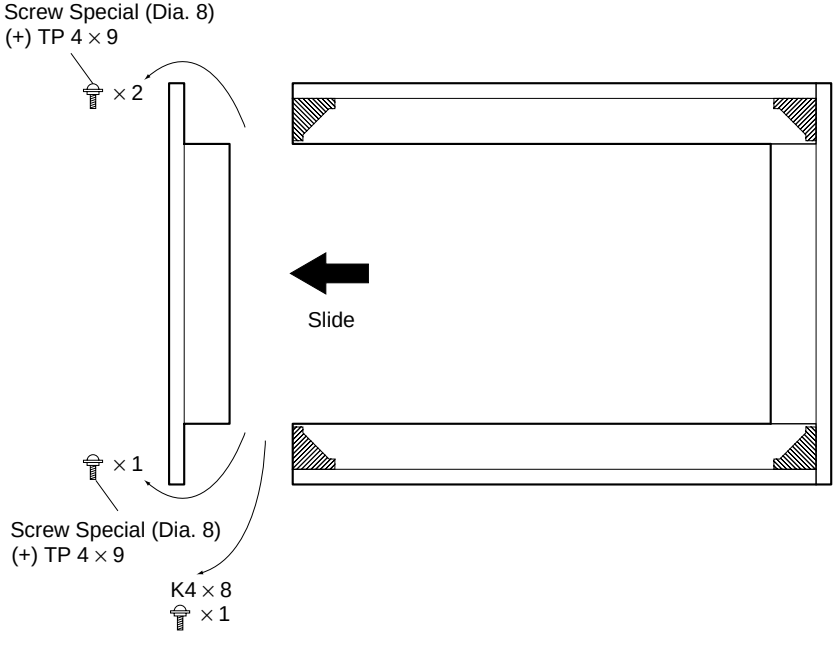




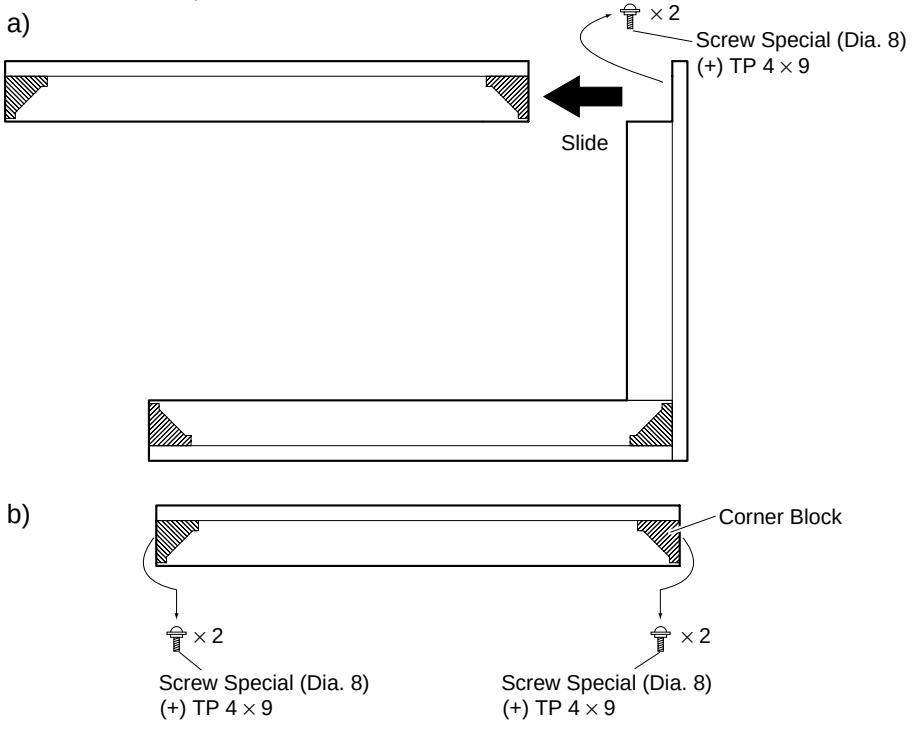
FRAME SUB ASSY, RIGHT REMOVAL



FRAME SUB ASSY, LEFT REMOVAL

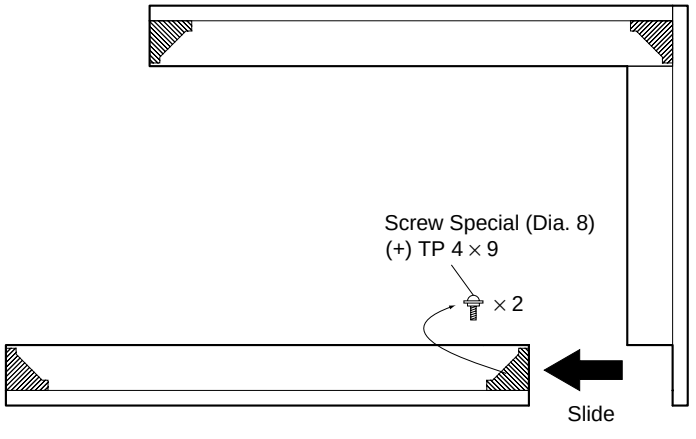


FRAME SUB ASSY, TOP REMOVAL

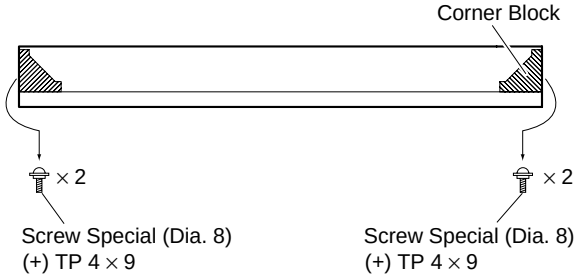


FRAME SUB ASSY, BOTTOM REMOVAL

a)



b)

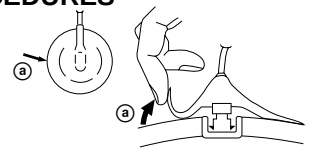


NOTE : When replacing the Frame Sub-Assy Top and Bottom, fix the original corner block to the new part.

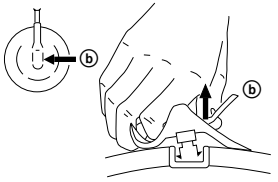
• REMOVAL OF ANODE-CAP

NOTE : After removing the anode, short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT.

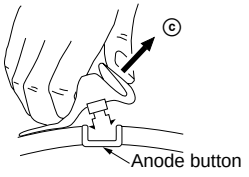
• REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



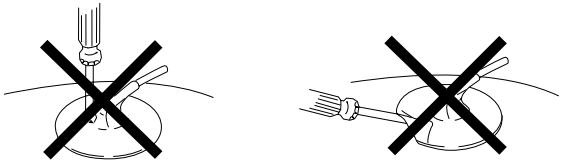
② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.



③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ⓒ.

• HOW TO HANDLE AN ANODE-CAP

① Do not damage the surface of anode-caps with sharp shaped objects.
② Do not press the rubber too hard so as not to damage the inside of anode-cap. A metal fitting called the shatter-hook terminal is built into the rubber.
③ Do not turn the foot of rubber over too hard. The shatter-hook terminal will stick out or damage the rubber.

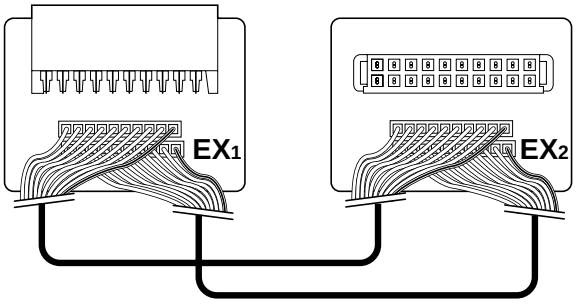


SECTION 3
SERVICE JIG

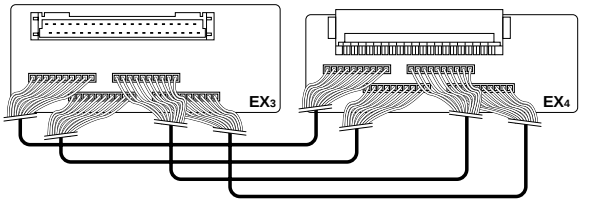
3-1. JIGS REQUIRED FOR SERVICING

REF NO.	DESCRIPTION	PART NO.	REMARK
J-1	TOOL (20P), SERVICE	3-702-763-01	For A to V board extension
J-2	TOOL (40P), SERVICE	3-702-764-01	For A to E board extension
J-3	TOOL (50P-A), SERVICE	3-702-765-01	For A to B3 board extension
J-4	TOOL (50P-J), SERVICE	3-702-766-01	For A to J board extension For D to D1 board extension

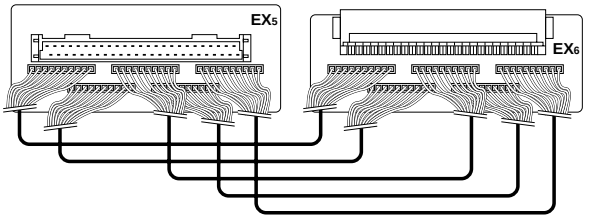
J-1



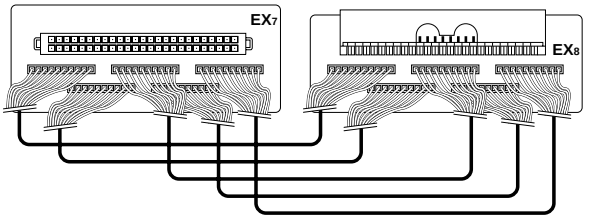
J-2



J-3



J-4



SECTION 4
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switches should be set as follows unless otherwise noted:
PICTURE control ..... normal
BRIGHTNESS control ..... normal

Perform the adjustments in the following order :

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

Note : Test Equipment Required.

1. Color-bar/Pattern Generator
2. Degausser
3. Oscilloscope

Preparation :

- In order to reduce the influence of geomagnetism on the set's picture tube, face it east or west.
- Switch on the set's power and degauss with the degausser.

4-1. BEAM LANDING

1. Input a white signal with the pattern generator.
   Contrast, Brightness } normal
2. Position neck assy as shown in Fig4-1.
3. Set the pattern generator raster signal to a green raster.
4. Move the deflection yoke to the rear and adjust with the purity control so that the green is at the center and the blue and the red take up equally sized areas on each side.
   (See Figures 4-1 through 4-3.)
5. Move the deflection yoke forward and adjust so that the entire screen is green. (See Figure 4-2.)
6. Switch the raster signal to blue, then to green and verify the condition.
7. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws and DY spacers.
8. If the beam does not land correctly in all the corners, use a magnet to adjust it.
   (See Figure 4-4.)

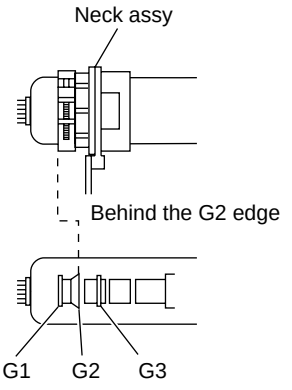


Fig. 4-1

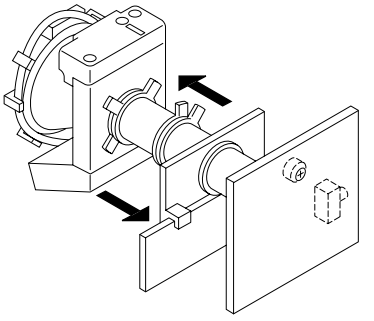


Fig. 4-2

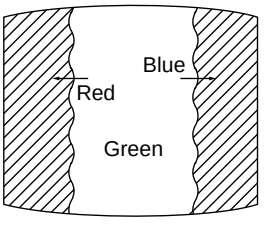


Fig. 4-3

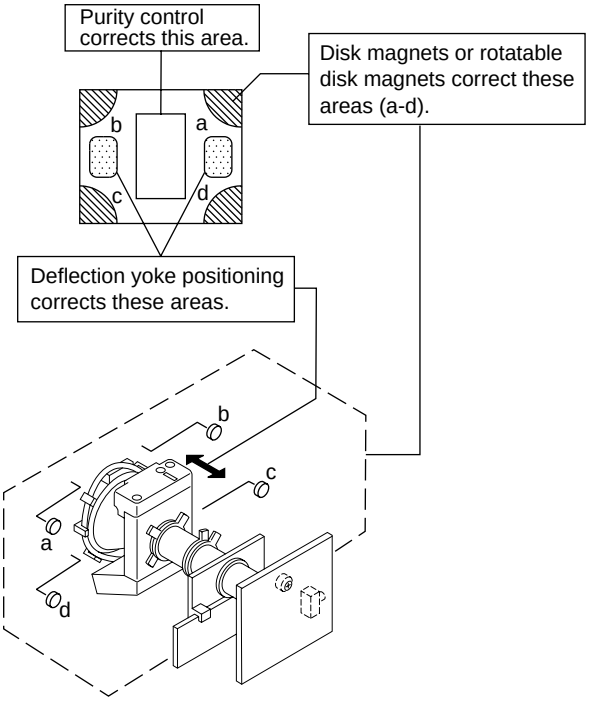


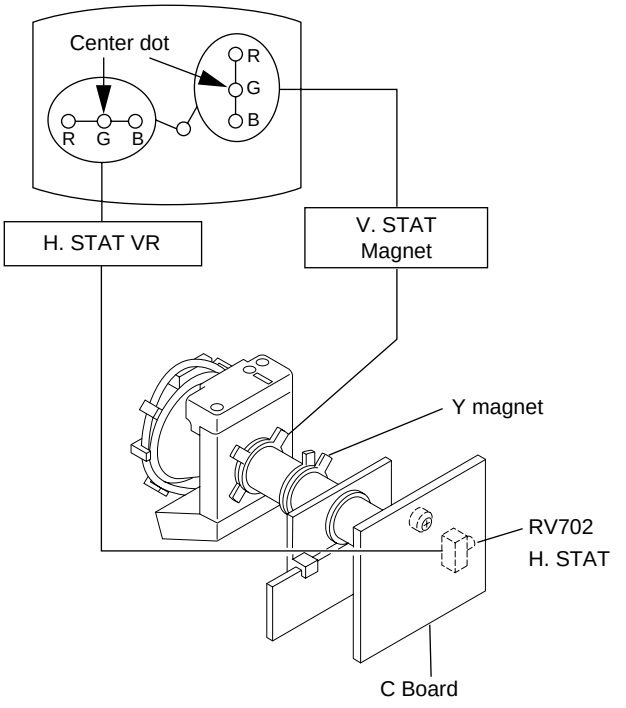
Fig. 4-4

4-2. CONVERGENCE ADJUSTMENT

Preparation :

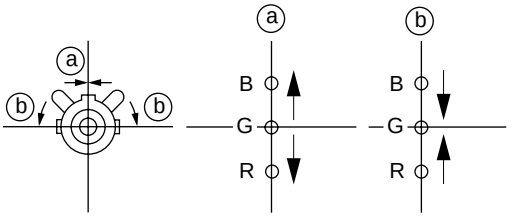
- Before starting this adjustment, adjust the focus, horizontal size and vertical size.
- Set the PICTURE 70% and BRIGHTNESS 0%.
- Cross hatch / Dot pattern.

(1) Horizontal and Vertical Static Convergence

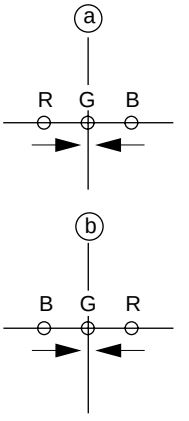


1. (Moving horizontally), adjust the H.STAT control so that the red, green and blue dots are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green and blue dots are on top of each other at the center of the screen.
3. Adjust Horizontal Trapezoid with “DAC 04 HTR” in Service Mode to make H-Trapezoid distortion best.
4. If the H.STAT variable resistor cannot bring the red, green and blue dots together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V.STAT magnet in the manner given below.
   (In this case, the H.STAT variable resistor and the V.STAT magnet influence each other, so be sure to perform adjustments while tracking.)

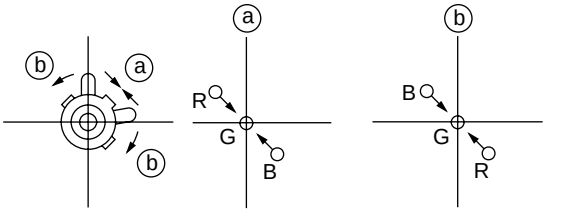
① V. STAT

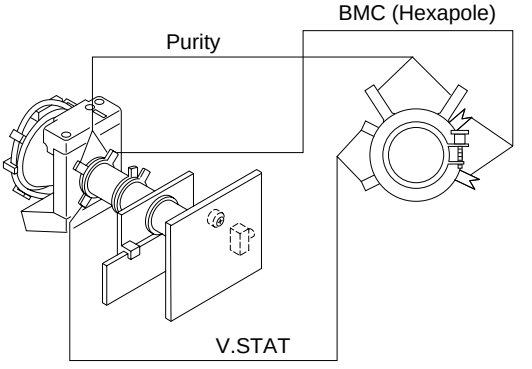


② H. STAT VR



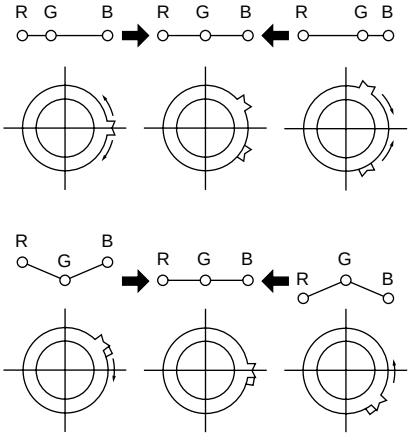
③





④ BMC (Hexapole) Magnet.

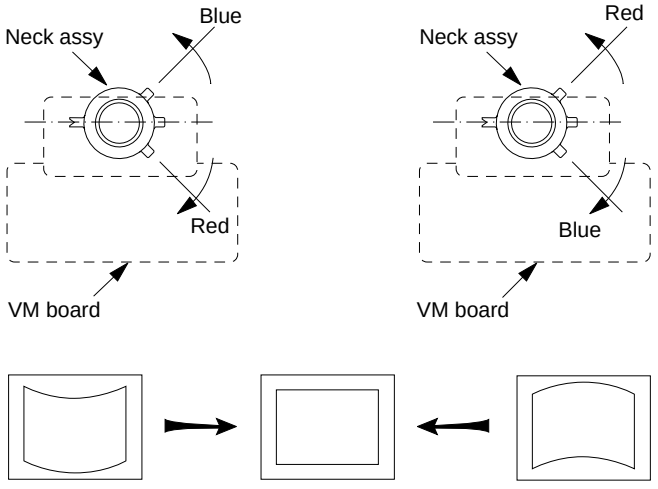
If the red, green and blue dots are not balanced or aligned, then use the BMC magnet to adjust in the manner described below.



⑤ Y separation axis correction magnet adjustment.

1. Receive the cross-hatch signal and adjust [PICTURE] to [MIN] and [BRIGHTNESS] to [STANDARD] .

2. Adjust the Y separation axis correction magnet on the neck assembly so that the horizontal lines at the top and bottom of the screen are straight.



Note

1. The Red and Blue magnets should be equally far from the horizontal center line.
2. Do not separate the Red and Blue magnets too far. (Less than 8 mm)

(2) Dynamic Convergence Adjustment

Preparation:

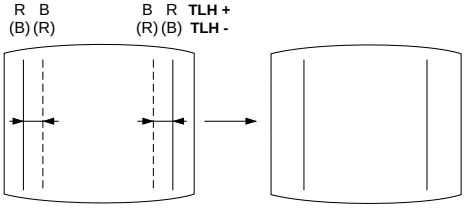
- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence
- Set the PICTURE and BRIGHTNESS to normal.

1. Adjust TLH. (TLH correction piece)

① Receive the dot/hatch pattern signal and adjust picture quality by the menu.

② Correct horizontal mis-convergence of red and blue of both sides on the X axis.

When red is outside insert BMC magnet to right side (THL+) views from DY neck. And when blue is outside, insert it to left side (THL–) and take both sides.



2. Adjust XCV core.

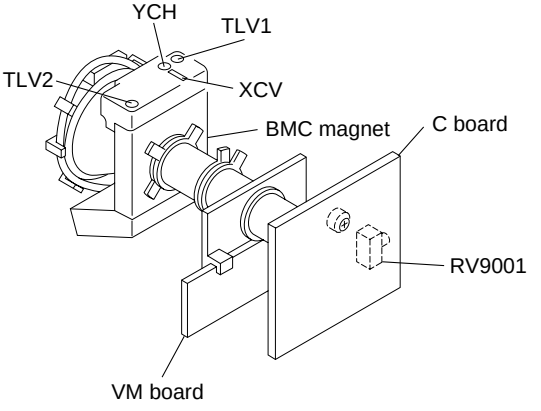
To able to become balance of XCV on the X axis well.

3. Adjust V-TILT.

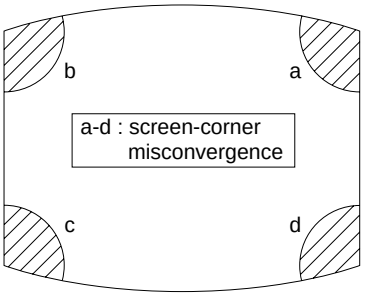
Correct the vertical mis-convergence of red and blue of vertically sides on the Y axis.

4. Adjust YCH.

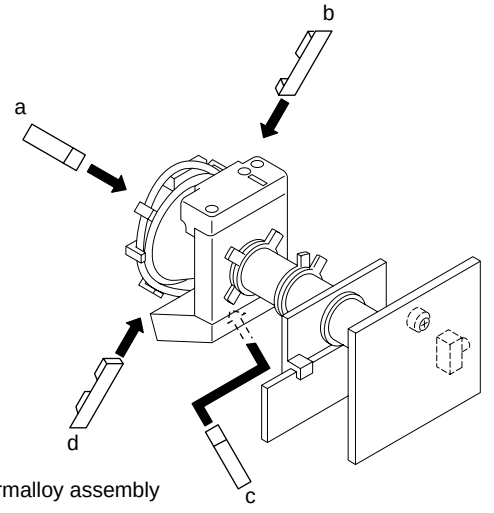
Adjust horizontal mis-convergence of red and blue of vertically sides on the Y axis. Mentioned above steps 2 to 4 are adjusting respectively perform minuteness tracking.



(3) Screen-corner Convergence



Fix a Permalloy assy corresponding to the misconverged areas.

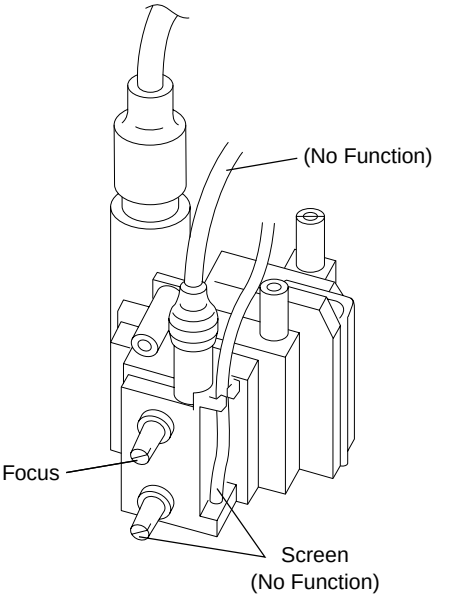


4-3. FOCUS ADJUSTMENT

Note

Focus adjustment should be completed before W/B adjustment.

(1) Receive digital monoscope pattern.
(2) Set "A/V CONTROL" to "STANDARD".
(3) Adjust FOCUS VR so that the center of the screen becomes justfocus.
(4) Change the receiving signal to white pattern and blue back.
(5) Confirm MAGENTA RING should not be over the limit sample. In case MAGENTA RING is over the limit sample, adjust FOCUS VR to take tracking of MAGENTA RING and FOCUS.



FLYBACK TRANSFORMER (T6803)

4-4. NECK ASSY TWIST ADJUSTMENT

(1) Receive dot/hatch pattern.
(2) Turn FOCUS VR fully counter-clockwise.
(3) Confirm the dot shape at the screen center. (Fig. 4-4)
(4) Resume FOCUS VR.

Note

In case of turning NECK ASSY, loosen the screw 3 turns. Do not move the position.

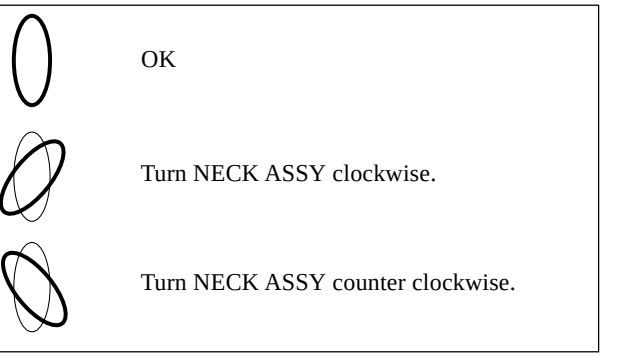
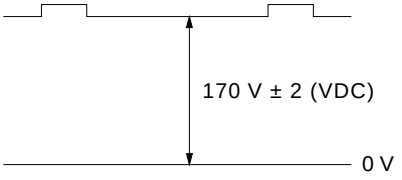


Fig. 4-4

4-5. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

1. G2 (SCREEN) ADJUSTMENT

1) Set the PICTURE and BRIGHTNESS to normal.
2) Put to VIDEO input mode without signals.
3) Connect R, G and B of the C board cathode to the oscilloscope.
4) Adjust BRIGHTNESS to obtain the cathode voltage to the value below.
5) Whilst watching the picture, adjust the screen VR (RV9002) located on the C board to the point just before the flyback return lines disappear (to the point before cut-off)



2. WHITE BALANCE ADJUSTMENT

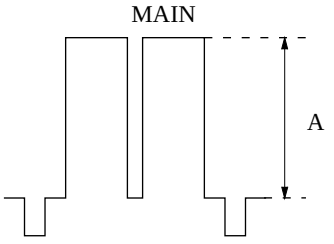
1) Set to Service Mode (Refer Section 4-1: ADJUSTMENTS WITH COMMANDER).
2) Input white raster signal.
3) Set the following condition.
   PICTURE minimum, BRIGHTNESS 50%
4) Select GCT (WHB 7) and BCT (WHB 8) with [1] and [4], and adjust the level with [3] and [6] for the best white balance.
5) Set the PICTURE to maximum.
6) Select GDR (WHB 4) and BDR (WHB 5) with [1] and [4], and adjust the level with [3] and [6] for the best white balance.
7) Write into the memory by pressing [MUTING] then [0].

3. SUB PICTURE BRIGHTNESS ADJUSTMENT

1) Tune RF PAL white signal at program No. 1 and No. 2.
2) Select “TWIN PICTURE” mode.
3) Receive different RF PAL white signals in MAIN and Sub picture.
4) Adjust RV3300 on A PWB, so that the output from the 17 pin and 20 pin of the CN1180 becomes within the spec.

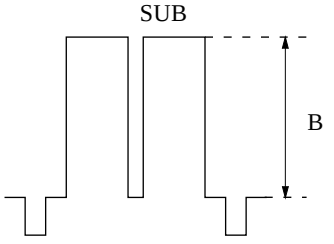
CVBS 1

17 pin



CVBS 2

20 pin



Spec: |A - B| ≤ ± 20mV

SECTION 5
CIRCUIT ADJUSTMENTS

5-1. ADJUSTMENTS WITH COMMANDER

Service adjustments are made with the RM-916 that comes with this unit.

a. ENTERING SERVICE MODE

With the unit on standby
↓
[DISPLAY]
↓
[5]
↓
[VOL (+)]
↓
[POWER]

This operation sequence puts the unit into service mode.

b. METHOD OF CANCELLATION FROM SERVICE MODE

Set the standby condition (Press [POWER] button on the commander), then press [POWER] button again, hereupon it becomes TV mode.

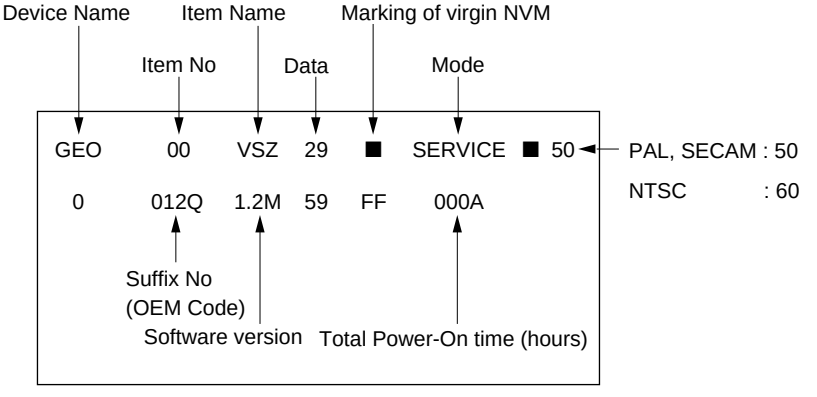
c. METHOD OF WRITE INTO MEMORY

1) Set to Service Mode.
2) Press [1] (UP) and [4] (DOWN), select an item of adjustment.
3) Press [MUTING] button and it will indicate WRITE on the screen.
4) Press [0] button to write into memory.

d. MEMORY WRITE CONFIRMATION METHOD

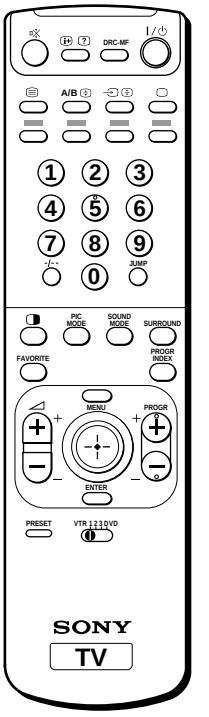
1) After adjustment, pull out the plug from AC outlet, and then plug into AC outlet again.
2) Turn the power switch ON and set to Service Mode.
3) Call the adjusted items again to confirm adjustments were made.

The screen display is :



[1], [4]	Select the adjustment item.
↓	
[3], [6]	Raise/lower the data value.
↓	
[MUTING]	Writes.
↓	
[0]	Executes the writing.

[7], [0]	All the data becomes the values in memory.
[8], [0]	All user control goes to the standard state.
[5], [0]	Service data initialization (Be sure not to use usually.)
[DISPLAY], [0]	Write 50Hz adjustment data to 60Hz, or vice versa.
[2], [0]	Copy and write all data.



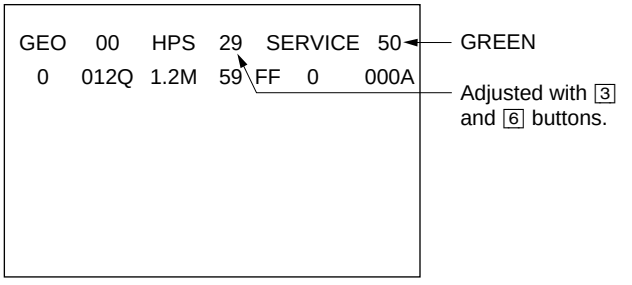
RM-916

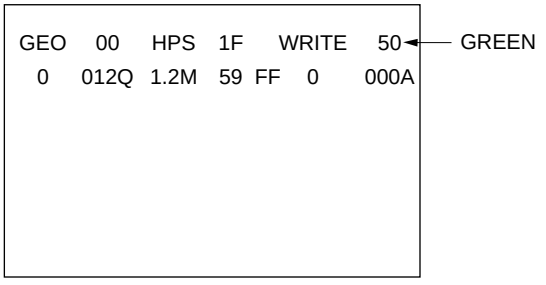
5-2. ADJUSTMENT METHOD

Item Number 00 of device GEO

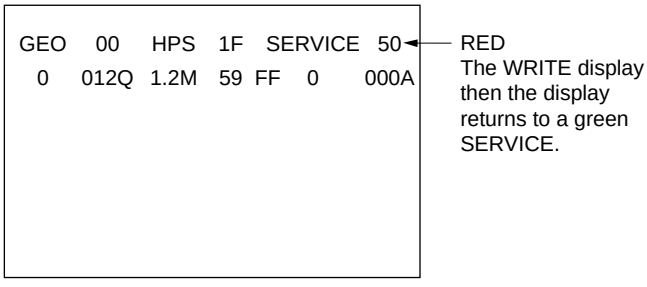
This explanation uses H-Position as an example.

1. Select “GEO 00 VSZ” with the [1] and [4] buttons.
2. Raise/lower the data with the [3] and [6] buttons.
3. Select the optimum state. (The standard is 1F for PAL reception.)
4. Write with the [MUTING] button. (The display changes to WRITE.)
5. Execute the writing with the [0] button. (The WRITE display will be changed to red color while excuting, and back to SERVICE.)





Written with [MUTING]



Write executed with [0]

Use the same method for all Items. Use [1] and [4] to select the adjustment item, use [3] and [6] to adjust, write with [MUTING], then execute the write with [0].

Note : 1. In [WRITE], the data for all items are written into memory together.

2. For adjustment items that have different standard data between 50Hz or 60Hz, be sure to use the respective input signal after adjustment.
3. Additional function to skip category (device) to category (device).

   example:

   GEO 00 HPS

   ↕

   DAC 00 XXX

   The buttons for the function above should be cursor +/–.

Adjustment Item Table

Category	Functionality		Initial	Range	Function	Table & Note	Register	Device & Slave	RAM Address
	No.	Name	Data				(Bit Range)	Address	(Bit Range)
GEO	00	VSZ	21	3F	V SIZE	FF/R4/PR*50/60*VC/NC, TW/IX	11 (7-2)	CXA2100AQ (86H)	369 (7-2)
	01	VPS	27	3F	V POSITION	FF/R4/PR*50/60*VC/NC, TW/IX	12 (7-2)		354 (7-2)
	02	VLN	5	0F	V LINEARITY	FF/R4/PR*50/60*VC/NC	13 (7-4)		95 (3-0)
	03	SCO	0A	0F	S CORRECTION	FF/R4/PR*50/60*VC/NC	13 (3-0)		95 (7-4)
	04	HSZ	1E	3F	H SIZE	FF/R4/PR*50/60*VC/NC, TW/IX	14 (7-2)		36A (7-2)
	05	HPS	2F	3F	H POSITION	FF/R4/PR*50/60*VC/NC, TW/IX	19 (7-2)		355 (7-2)
	06	PAP	28	3F	PIN AMP	FF/R4/PR*50/60*VC/NC	15 (7-2)		98 (7-2)
	07	UPN	25	3F	UPPER CORNER PIN	FF/R4/PR*50/60*VC/NC	16 (7-2)		99 (7-2)
	08	LPN	23	3F	LOWER CORNER PIN	FF/R4/PR*50/60*VC/NC	17 (7-2)		9D (7-2)
	09	TRZ	0C	0F	TRAPEZIUM	FF/R4/PR*50/60*VC/NC, TW/IX	18 (7-4)		36B (7-4)
	0A	AGL	0A	0F	AFC ANGLE	FF/R4/PR*50/60*VC/NC	1A (3-0)		9B (3-0)
	0B	BOW	6	0F	AFC BOW	FF/R4/PR*50/60*VC/NC	1A (7-4)		9B (7-4)
	0C	LBL	12	3F	LEFT H BLANKING	FF/R4/PR*50/60*VC/NC, TW/IX	1B (7-2)		9C (7-4)
	0D	RBL	2C	3F	RIGHT H BLANKING	FF/R4/PR*50/60*VC/NC, TW/IX	1C (7-2)		9C (3-0)
	0E	MPN	0	3	MIDDLE PIN DISTORTION COMPENSATION	50/60*VC/NC	16 (1-0)		
	0F	UVL	0	0F	UPPER V LINEARITY	50/60Hz	1F (7-4)		
	10	LVL	0	0F	LOWER V LINEARITY	50/60Hz	1F (3-0)		
	11	HCP	0	3	HORIZONTAL HIGH VOLTAGE COMPENSATION	50/60*VC/NC	15 (1-0)		
	12	VCP	1	3	VERTICAL HIGH VOLTAGE COMPENSATION	50/60*VC/NC	12 (1-0)		
	13	VAS	2F	3F	V ASPECT	50/60*VC/NC	1D (7-2)		
	14	VSC	1F	3F	V SCROLL	50/60Hz	1E (7-2)		
	15	USC	0	1	UNDER-SCAN MODE ON/OFF	50/60*VC/NC	1D (0)		
	16	VBW	0	3	V BLANKING WIDTH CONTROL	FF/R4/PR*50/60*VC/NC	19 (1-0)		6D (1)
	17	AT1	2	3	AKB REFERENCE TIMING	FF/R4/PR*50/60*VC/NC	1E (1-0)		
DAC	00	HCT	33	FF	H CENTER	50/60Hz	CH 10 (7-0)	MB88141 (96H)	
	01	HLN	27	3F	H LINEARITY	FF/R4/PR*50/60*VC/NC	CH 4 (7-2)		
	02	MDP	26	3F	MIDDLE PIN	FF/R4/PR*50/60*VC/NC	CH 1 (7-2)		
	03	CCP	37	3F	LOWER CORNER PIN	FF/R4/PR*50/60*VC/NC	CH 9 (7-2)		
	04	HTR	26	3F	HORIZONTAL TRAPEZIUM	FF/R4/PR*50/60*VC/NC	CH 6 (7-2)		
	05	DF	01	1	DF ON/OFF SWITCH	FF/R4/PR*50/60*VC/NC	CH 2 (7-0)		
	06	DPH	1F	3F	DF PHASE	FF/R4/PR*50/60*VC/NC	CH 3 (7-2)		
	07	QPH	19	3F	QP PHASE	FF/R4/PR*50/60*VC/NC	CH 7 (7-2)		
	08	QAC	23	3F	QP AMPLITUDE	FF/R4/PR*50/60*VC/NC	CH 8 (7-2)		
	09	QDC	20	3F	QP DC LEVEL	FF/R4/PR*50/60*VC/NC	CH 12 (7-2)		
	0A	QDV	1F	3F	QP V MODULATION	FF/R4/PR*50/60*VC/NC	CH 5 (7-2)		
	0B	QAV	1A	3F	QP AMPLITUDE MODULATION	FF/R4/PR*50/60*VC/NC	CH 11 (7-2)		
	0C	ABC	0	FF	ABL D/A CONTROL	ECO ON/OFF*VC/NC			

Adjustment Item Table

Category	Functionality		Initial	Range	Function	Table & Note	Register	Device & Slave	RAM Address
	No.	Name	Data				(Bit Range)	Address	(Bit Range)
WHB	00	CBO	7	0F	DC OFFSET CANCELLER FOR CB1		0F (7-4)	CXA2100AQ(86H)	106
	01	CRO	7	0F	DC OFFSET CANCELLER FOR CR1		0F (3-0)		
	02	SBR	18	3F	SUB BRIGHTNESS CONTROL		09 (7-2)		107
	03	RDR	29	3F	R DRIVE		06 (7-2)		A1 (7-2)
	04	GDR	25	3F	G DRIVE		07 (7-2)		A2 (7-2)
	05	BDR	26	3F	B DRIVE		08 (7-2)		A3 (7-2)
	06	RCT	29	3F	R CUTOFF		0A (7-2)		A5 (3-0)
	07	GCT	12	3F	G CUTOFF		0B (7-2)		A6 (7-4)
	08	BCT	31	3F	B CUTOFF		0C (7-2)		A6 (3-0)
	09	SBO	29	3F	SUB BRIGHTNESS OFFSET	PICTURE MODE EXCEPT DYNAMIC	09 (7-2)		A3 (7-2)
	0A	RDO	1F	3F	R DRIVE OFFSET	PICTURE MODE EXCEPT DYNAMIC	06 (7-2)		A5 (3-0)
	0B	GDO	1A	3F	G DRIVE OFFSET	PICTURE MODE EXCEPT DYNAMIC	07 (7-2)		A6 (7-4)
	0C	BDO	1A	3F	B DRIVE OFFSET	PICTURE MODE EXCEPT DYNAMIC	08 (7-2)		A6 (3-0)
	0D	RCO	1F	3F	R CUTOFF OFFSET	PICTURE MODE EXCEPT DYNAMIC	0A (7-2)		106
	0E	GCO	1E	3F	G CUTOFF OFFSET	PICTURE MODE EXCEPT DYNAMIC	0B (7-2)		
	0F	BCO	15	3F	B CUTOFF OFFSET	PICTURE MODE EXCEPT DYNAMIC	0C (7-2)		107
SAJ	00	PIC	3F	3F	PICTURE CONTROL	PICTURE MODE EXCEPT PERSONAL	01 (7-2)	CXA2100AQ(86H)	105
	01	BRT	1F	3F	BRIGHTNESS CONTROL	PICTURE MODE EXCEPT PERSONAL	04 (7-2)		
	02	COL	27	3F	COLOR CONTROL	PICTURE MODE EXCEPT PERSONAL	03 (7-2)		
	03	HUE	1F	3F	HUE CONTROL	PICTURE MODE EXCEPT PERSONAL	02 (7-2)		
	04	SHP	24	3F	SHARPNESS CONTROL	PICTURE MODE EXCEPT PERSONAL	05 (7-2)		
	05	VML	3	3	VM LEVEL	PICTURE MODE	09 (1-0)		105
	06	DYC	1	1	DYNAMIC COLOR ON/OFF	PICTURE MODE	00 (3)		108
	07	CTM	0	1	COLOR TEMPERATURE FOR DYNAMIC COLOR	PICTURE MODE	00 (0)		109
	08	CAX	2	3	COLOR MATRIX SPECIFICATION	50/60Hz	00 (2-1)		10A
	09	GMA	3	3	GAMMA CORRECTION	PICTURE MODE	04 (1-0)		
	0A	DCT	1	3	DC TRANSMISSION CONTROL	PICTURE MODE	0C (1-0)		
	0B	DPL	1	3	AUTO PEDESTAL LEVEL CONTROL	PICTURE MODE	0B (1-0)		
	0C	ABM	0	3	ABL MODE CONTROL	PICTURE MODE	08 (1-0)		
	0D	ABT	0	3	ABL CURRENT DETECTION VTH CONTROL	ECO ON/OFF*VC/NC	07 (1-0)		
	0E	CLO	9	0F	COLOR OFFSET	50/60*TV/VIDEO	03 (7-2)		
	0F	CLW	3	7	COLOR STEP WIDTH TO THE CHANGE OF S/N		03 (7-2)		
	10	HUO	9	0F	HUE OFFSET	50/60*TV/VIDEO	02 (7-2)		
	11	SHO	7	1F	SHARPNESS OFFSET	50/60*TV/VIDEO/DVD	05 (7-2)		
	12	SHW	1	7	SHARPNESS STEP WIDTH TO THE CHANGE OF S/N		05 (7-2)		
	13	PIO	5	7	PICTURE OFFSET FOR TWIN/INDEX	TWIN/INDEX	01 (7-2)		
	14	BRO	7	0F	BRIGHTNESS OFFSET	ECO ON/OFF*VC/NC	04 (7-2)		

Adjustment Item Table

Category	Functionality		Initial	Range	Function	Table & Note	Register	Device & Slave	RAM Address
	No.	Name	Data				(Bit Range)	Address	(Bit Range)
JGL	00	PON	1	1	RGB AND AKB REFERENCE PULSE OUTPUT ON/OFF		00 (7)	CXA2100AQ(86H)	
	01	RGB	7	7	RGB OUTPUT SELECTION		00 (6-4)		
	02	AGG	0	3	AGING MODE SELECTION		0E (1-0)		
	03	DPS	0	1	Y/C DELAY LINE PASS MODE SWITCH		0E (3)		
	04	BBT	3	3	RGB BOTTOM LIMITTER CONTROL		06 (1-0)		
	05	LML	0	3	RGB AMPLITUDE LIMITTER CONTROL		01 (1-0)		
	06	PAB	0F	0F	DC LEVEL FOR PEAK ABL		0E (7-4)		
	07	SCO	0C	0F	SUB PICTURE CONTROL		0D (7-4)		
	08	LV2	7	0F	RGB LEVEL FOR RGB2		0D (3-0)		
	09	SF0	1	1	SHARPNESS CIRCUIT F0	50/60*TV/VIDEO/DVD	0E (2)		
	0A	PRO	0	3	PRE/OVER-SHOOT RATIO CONTROL	50/60*TV/VIDEO/DVD	0A (1-0)		
	0B	LTI	2	3	LUMINANCE TRANSIENT IMPROVEMENT	PICTURE MODE	05 (1-0)		
	0C	CTI	1	3	CHROMINANCE TRANSIENT IMPROVEMENT	PICTURE MODE	03 (1-0)		
YCT	00	TNT	1F	3F	TINT ADJUSTMENT FOR NTSC	TV/VIDEO	00 (5-0)	CXA2123Q(88H)	
	01	PNG	0	1	PAL/NTSC GATE WIDTH		00 (6)		
	02	PNI	0	1	PAL/NTSC SENSITIVITY SW		00 (7)		
	03	SCL	7	0F	SUB COLOR CONTROL	50/60*TV/VIDEO	01 (3-0)		
	04	SCT	8	0F	SUB CONTRAST CONTROL	TV/VIDEO	01 (7-4)		
	05	SF0	2	3	SHARPNESS CENTER FREQUENCY CHANGING		02 (1-0)		
	06	SEQ	3	3	SHARPNESS EQUALIZER CHARACTERISTIC		02 (3-2)		
	07	SHG	5	0F	SHARPNESS GAIN CONTROL	50/60*TV/VIDEO/DVD	02 (7-4)		
	08	YOL	1F	3F	Y-OUTPUT LEVEL CONTROL		03 (5-0)		
	09	BSP	0	3	BLACK STRETCH START POINT CHANGING		03 (7-6)		
	0A	COL	1F	3F	CB/CR OUTPUT LEVEL CONTROL		04 (5-0)		
	0B	DCR	0	3	DC RESTORATION RATIO ADJUSTMENT		04 (7-6)		
	0C	BF0	1	3	BPF/TQF F0 ADJUSTMENT		05 (1-0)		
	0D	BFQ	2	3	BPF/TQF Q ADJUSTMENT		05 (3-2)		
	0E	FSW	1	1	BPF/TQF SWITCH		05 (4)		
	0F	SDT	1	1	SECAM DOUBLE TRAP SWITCH		05 (6)		
	10	LPF	1	1	Y/CB/CR LPF SWITCH		05 (7)		
	11	YDL	6	0F	Y-DL TIME ADJUSTMENT	2DCOMB/3DCOMB/S-INPUT/OTHERS	06 (6-3)		
	12	CMT	0	1	CB/CR OUTPUT MUTE SWITCH		07 (7)		
	13	BO1	7	0F	CB OFFSET1 ADJUSTMENT (MAIN ROUTE)		08 (7-4)		
	14	RO1	7	0F	CR OFFSET1 ADJUSTMENT		08 (3-0)		
	15	CDF	0	7	V COUNT DOWN FREQUENCY SWITCH		0A (2-0)		
	16	CDM	0	3	V COUNT DOWN JUDGE SWITCH		0A (4-3)		
	17	AFC	0	3	AFC SENSITIVITY SWITCH	(TV/VIDEO/DVD)	0A (6-5)		
	18	MVM	0	1	MACROVISION MASK + AFC MASK		0A (7)		
	19	SRY	7	0F	SECAM R-Y BLACK ADJUSTMENT		0B (3-0)		
	1A	SBY	1	0F	SECAM B-Y BLACK ADJUSTMENT		0B (7-4)		
	1B	BEL	2	3	SECAM BELL/HPF SWITCHING		0C (1-0)		
	1C	BLF	0	1	BELL F0 ADJUSTMENT		0C (2)		

Adjustment Item Table

Category	Functionality		Initial	Range	Function	Table & Note	Register	Device & Slave	RAM Address
	No.	Name	Data				(Bit Range)	Address	(Bit Range)
YCT	1D	SVI	0	1	SECAM V-ID SWITCHS		0C (3)	CXA2123Q(88H)	
	1E	SGP	0	3	SECAM GATE POSITION ADJUSTMENT		0C (5-4)		
	1F	SID	1	1	SECAM SENSITIVITY SWITCH	EXCEPT SECAM	0C (6)		
	20	SIH	0	1	SECAM INHIBITION SWITCH		0C (7)		
	21	STP	0	1	Y BLACK LEVEL SETUP FOR PAL PLUS		0D (1)		
	22	HVC	2	3	H-VCO TEMPERATURE CHARACTER CANCELLING		0D (7-6)		
	23	3NR	1	1	3D NR OPERATION ON/OFF				
	24	BW6	1	1	3D NR FOR 60Hz NON-BUST SIGNAL ON/OFF				
	25	WSH	0	3	SHARPNESS GAIN STEP FOR NOISE REDUCTION		02 (7-4)		
	26	WCO	0	3	DC RESTORATION RATIO ADJUSTMENT		04 (5-0)		
SYC	00	TNT	1F	3F	TINT ADJUSTMENT FOR NTSC	TV/VIDEO	00 (5-0)	CXA2123Q(8AH)	
	01	PNG	0	1	PAL/NTSC GATE WIDTH		00 (6)		
	02	PNI	0	1	PAL/NTSC SENSITIVITY SW		00 (7)		
	03	SCL	7	0F	SUB COLOR CONTROL	50/60*TV/VIDEO/DVD	01 (3-0)		
	04	SCT	7	0F	SUB CONTRAST CONTROL	TV/VIDEO	01 (7-4)		
	05	SF0	2	3	SHARPNESS CENTER FREQUENCY CHANGING		02 (1-0)		
	06	SEQ	3	3	SHARPNESS EQUALIZER CHARACTERISTIC		02 (3-2)		
	07	SHG	7	0F	SHARPNESS GAIN CONTROL		02 (7-4)		
	08	YOL	1F	3F	Y-OUTPUT LEVEL CONTROL		03 (5-0)		
	09	BSP	0	3	BLACK STRETCH START POINT CHANGING		03 (7-6)		
	0A	COL	1F	3F	CB/CR OUTPUT LEVEL CONTROL		04 (5-0)		
	0B	DCR	0	3	DC RESTORATION RATIO ADJUSTMENT		04 (7-6)		
	0C	BF0	1	3	BPF/TQF F0 ADJUSTMENT		05 (1-0)		
	0D	BFQ	2	3	BPF/TQF Q ADJUSTMENT		05 (3-2)		
	0E	FSW	1	1	BPF/TQF SWITCH		05 (4)		
	0F	SDT	1	1	SECAM DOUBLE TRAP SWITCH		05 (6)		
	10	LPF	1	1	Y/CB/CR LPF SWITCH		05 (7)		
	11	YDL	3	0F	Y-DL TIME ADJUSTMENT	PAL/NTSC/SECAM/S-INPUT	06 (6-3)		
	12	NCM	1	1	1-H ADDITION SWITCH		06 (7)		
	13	CMT	0	1	CB/CR OUTPUT MUTE SWITCH		07 (7)		
	14	BO1	7	0F	CB OFFSET1 ADJUSTMENT (MAIN ROUTE)		08 (7-4)		
	15	RO1	7	0F	CR OFFSET1 ADJUSTMENT		08 (3-0)		
	16	CDF	0	7	V COUNT DOWN FREQUENCY SWITCH		0A (2-0)		
	17	CDM	0	3	V COUNT DOWN JUDGE SWITCH		0A (4-3)		
	18	AFC	0	3	AFC SENSITIVITY SWITCH	(TV/VIDEO/DVD)	0A (6-5)		
	19	MVM	0	1	MACROVISION MASK + AFC MASK		0A (7)		
	1A	SRY	7	0F	SECAM R-Y BLACK ADJUSTMENT		0B (3-0)		
	1B	SBY	1	0F	SECAM B-Y BLACK ADJUSTMENT		0B (7-4)		
	1C	BEL	2	3	SECAM BELL/HPF SWITCHING		0C (1-0)		

Adjustment Item Table

Category	Functionality		Initial	Range	Function	Table & Note	Register	Device & Slave	RAM Address
	No.	Name	Data				(Bit Range)	Address	(Bit Range)
SYC	1D	BLF	0	1	BELL F0 ADJUSTMENT		0C (2)	CXA2123Q(8AH)	
	1E	SVI	0	1	SECAM V-ID SWITCH		0C (3)		
	1F	SGP	0	3	SECAM GATE POSITION ADJUSTMENT		0C (5-4)		
	20	SID	1	1	SECAM SENSITIVITY SWITCH	EXCEPT SECAM	0C (6)		
	21	SIH	0	1	SECAM INHIBITION SWITCH		0C (7)		
	22	STP	0	1	Y BLACK LEVEL SETUP FOR PAL PLUS		0D (1)		
	23	HVC	2	3	H-VCO TEMPERATURE CHARACTER CANCELLING		0D (7-6)		
AP	00	BAS	0A	0F	BASS CONTROL	SOUND MODE EXCEPT PERSONAL	#4 (3-0)	TDA7315(80H)	358 (1-0)
	01	TRE	0A	0F	TREBLE CONTROL	SOUND MODE EXCEPT PERSONAL	#5 (3-0)		359 (1-0)
	02	LDN	1	1	LOUDNESS ON/OFF		#3 (2)		
MSP	00	WST	15	FF	W/G STEREO THRESHOLD			MSP3415D(84H)	165
	01	WBT	EA	FF	W/G BILINGUAL THRESHOLD				166
	02	WLL	5	FF	W/G MONAURAL THRESHOLD				167
	03	WAC	1	0F	W/G AGREEMENT COUNT				168
	04	WDL	30	FF	W/G SEARCH DELAY				169
	05	NDL	20	FF	NICAM SEARCH DELAY				16A
	06	SDL	10	FF	STEREO STATUS READ DELAY				16B
	07	AGC	1	1	AGC SWITCH AUTO/CONSTANT		00BB (7)		116 (7)
	08	REL	28	3F	AGC GAIN AT CONSTANT MODE		00BB (6-1)		116 (6-1)
	09	CRM	0	1	CARRIER MUTING ON/OFF		00BB (9)		115 (1)
	0A	ACO	1	1	AUDIO CLOCK ON/OFF		0083 (5)		11A (5)
	0B	FP	1B	7F	FM PRESCALE FOR NON-M SYSTEM		000E (7-0)		329
	0C	FPM	32	7F	FM PRESCALE FOR M SYSTEM		000E (7-0)		32A
	0D	FH	2D	7F	FM PRESCALE FOR HDEV		000E (7-0)		32B
	0E	FHM	65	7F	FM PRESCALE FOR HDEV AND M		000E (7-0)		32C
	0F	WGP	2A	7F	W/G PRESCALE		000E (7-0)		32D
	10	NIP	6D	7F	NICAM PRESCALE		0010 (7-0)		32E
	11	ERR	50	FF	AUTO FM SWITCH THRESHOLD		0021 (10-3)		14F
	12	VOL	6D	FF	LOUDSPEAKER GAIN 0700H TO 07FFH		0000 (11-4)		368
LTI	00	LDH	1	1	HISTOGRAM SEGMENT SELECTION		00 (2)	TDA9178(40H)	175 (2)
	01	CFS	1	1	CONTOUR FILTER SELECTION		00 (3)		175 (3)
	02	WLB	0	1	LETTERBOX WINDOW SWITCH		00 (5)		175 (5)
	03	VDC	1	1	VIDEO DEPENDENT CORING	PICTURE MODE	00 (6)		175 (6)
	04	DEM	0	1	DEMONSTRATION MODE		00 (7)		175 (7)
	05	CDP	4	07	LUMINANCE DELAY		01 (2-0)		176 (2-0)
	06	OSP	0	1	OVERRULE SMART PEAKING		01 (5)		176 (5)
	07	WPO	0	1	WHITE POINT STRETCH OFF		01 (4)		176 (4)
	08	DSK	0	1	SKIN TONE SWITCH	PICTURE MODE	02 (0)		177 (0)
	09	ASK	0	1	SKIN TONE ANGLE SELECTION		02 (1)		177 (1)
	0A	WSK	0	1	SKIN TONE WIDTH SELECTION		02 (2)		177 (2)
	0B	SSK	0	1	SKIN TONE SIZE SELECTION		02 (3)		177 (3)

Adjustment Item Table

Category	Functionality		Initial	Range	Function	Table & Note	Register	Device & Slave	RAM Address
	No.	Name	Data				(Bit Range)	Address	(Bit Range)
LTI	0C	DGR	1	1	GREEN ENHANCEMENT SWICTH	PICTURE MODE & TWIN	02 (4)	TDA9178(40H)	A9 (4)
	0D	DGT	7	7	THRESHOLD OF GREEN ENHANCEMENT SWITCH				A9 (7-5)
	0E	GGR	0	1	GREEN ENHANCEMENT GAIN		02 (5)		177 (5)
	0F	WGR	0	1	GREEN ENHANCEMENT WIDTH		02 (6)		177 (6)
	10	SGR	0	1	GREEN ENHANCEMENT SIZE		02 (7)		177 (7)
	11	DBL	0	1	BLUE STRETCH SWITCH		03 (0)		178 (0)
	12	GBL	0	1	BLUE STRETCH GAIN SELECTION		03 (1)		178 (1)
	13	SBL	0	1	BLUE STRETCH SIZE SELECTION		03 (2)		178 (2)
	14	CDS	1	1	COLOR DEPENDENT SHARPNESS	PICTURE MODE	03 (3)		A9 (3)
	15	CST	7	7	THRESHOLD OF COLOR DEPENDENT SHARPNESS				A9 (2-0)
	16	CTI	0	1	COLOR TRANSIENT IMPROVEMENT	PICTURE MODE	03 (4)		178 (4)
	17	BON	0	1	BLACK OFFSET COMPENSATION	PICTURE MODE	03 (5)		178 (5)
	18	BTD	0	3F	ADAPTIVE BLACK STRETCH	PICTURE MODE	04 (5-0)		179 (5-0)
	19	NLD	15	3F	NON-LINAERITY AMPLIFIER	PICTURE MODE & TWIN	05 (5-0)		AA (5-0)
	1A	NLW	7	7	STEP WIDTH OF NON-LINAERITY AMPLIFIER		05 (5-0)		AE (6-4)
	1B	VGD	15	3F	VARIABLE GAMMA	PICTURE MODE & TWIN	06 (5-0)		AB (5-0)
	1C	VGW	0	7	STEP WIDTH OF VARIABLE GAMMA		06 (5-0)		AE (2-0)
	1D	PKD	3F	3F	PEAKING AMPLITUTE	PICTURE MODE	07 (5-0)		AC (5-0)
	1E	PKW	8	0F	STEP WIDTH OF PEAKING AMPLITUTE		07 (5-0)		AF (7-4)
	1F	SPD	0	3F	STEPNESS CORRECTION	PICTURE MODE	08 (5-0)		17D (5-0)
	20	CRD	11	3F	CORING LEVEL	PICTURE MODE	09 (5-0)		AD (5-0)
	21	CRW	9	0F	STEP WIDTH OF CORING LEVEL		09 (5-0)		AF (3-0)
	22	CRO	0	0F	CORING LEVEL OFFSET FOR VIDEO MODE		09 (5-0)		AF (3-0)
	23	LWD	1F	3F	LINE WIDTH CORRECTION		0A (5-0)		17F (5-0)
	24	SNM	0	7	S/N MODE UNDER UNREALIBLE S/N CONDITION				B0 (2-0)
	25	SNC	3	0F	S/N RATIO AVERAGE COUNTER	TV/VIDEO			B1 (3-0)
	26	FMC	2	0F	FEATURE MODE MATCHING COUNTER				B2 (3-0)
MID	00	HPH	0	FF	HORIZONTAL ACTIVE DISPLAY AREA PHASE			MB94918(68H)	
	01	VPH	0	3F	VERTICAL ACTIVE DISPLAY AREA PHASE				
	02	HSZ	0	FF	HORIZONTAL ACTIVE DISPLAY AREA SIZE				
	03	VSZ	0	FF	VERTICAL ACTIVE DISPLAY AREA SIZE				
	04	HPW	0	3F	DISPLAY H-SYNC PLUS WIDTH				
	05	VPW	0	7	DISPLAY V-SYNC PLUS WIDTH				
	06	YDL	0	3F	DISPLAY OUTPUT Y/C DELAY CORRECTION				
	07	MHP	0	FF	MAIN PICTURE HORIZONTAL POSITION (SINGLE & PINP)				
	08	MVP	0	FF	MAIN PICTURE VERTICAL POSITION (SINGLE & PINP)				
	09	MHS	0	FF	MAIN PICTURE HORIZONTAL SIZE (SINGLE & PINP)				
	0A	MVS	0	FF	MAIN PICTURE VERTICAL SIZE (SINGLE & PINP)				
	0B	PHP	0	FF	PINP SUB PICTURE HORIZONTAL POSITION				
	0C	PVP	0	FF	PINP SUB PICTURE VERTICAL POSITION				
	0D	PHS	0	FF	PINP SUB PICTURE HORIZONTAL SIZE				
	0E	PVS	0	FF	PINP SUB PICTURE VERTICAL SIZE				

Adjustment Item Table

Category	Functionality		Initial	Range	Function	Table & Note	Register	Device & Slave	RAM Address
	No.	Name	Data				(Bit Range)	Address	(Bit Range)
MID	0F	PHO	0	FF	PINP SUB PICTURE HORIZONTAL POSITION OFFSET			MB94918(68H)	
	10	PVO	0	FF	PINP SUB PICTURE VERTICAL POSITION OFFSET				
	11	TMP	0	FF	TWIN MAIN PICTURE HORIZONTAL POSITION				
	12	TSP	0	FF	TWIN SUB PICTURE HORIZONTAL POSITION				
	13	TVP	0	FF	TWIN MAIN & SUB PICTURE VERTICAL POSITON				
	14	THS	0	FF	TWIN MAIN & SUB PICTURE HORIZONTAL SIZE				
	15	TVS	0	FF	TWIN MAIN & SUB PICTURE VERTICAL SIZE				
	16	THO	0	FF	TWIN MAIN & SUB PICTURE HORIZONTAL POSITION OFFSET				
	17	TVO	0	FF	TWIN MAIN & SUB PICTURE VERTICAL POSITION OFFSET				
	18	XHS	0	FF	INDEX SUB PICTURE HORIZONTAL SIZE				
	19	XVS	0	FF	INDEX SUB PICTURE VERTICAL SIZE				
	1A	XHG	0	FF	INDEX HORIZONTAL GAP WIDTH BETWEEN PICTURES				
	1B	XVG	0	FF	INDEX VERTICAL GAP WIDTH BETWEEN PICTURES				
	1C	XHP	0	FF	INDEX 1ST SUB PICTURES HORIZONTAL POSITION				
	1D	XVP	0	FF	INDEX 1ST SUB PICTURES VERTICAL POSITION				
	1E	DHP	0	FF	DRC HORIZONTAL ACTIVE AREA POSITION				
	1F	DHS	0	FF	DRC HORIZONTAL ACTIVE PIXEL SIZE				
	20	DVP	0	3F	DRC VERTICAL ACTIVE AREA LINE POSITION				
	21	DVS	0	FF	DRC VERTICAL ACTIVE AREA LINE SIZE				
	22	VHP	0	FF	VDO HORIZONTAL ACTIVE AREA POSITION				
	23	VHS	0	FF	VDO HORIZONTAL ACTIVE AREA PIXEL SIZE				
	24	VEP	0	3F	VDO VERTICAL ACTIVE AREA EVEN POSITION				
	25	VVS	0	FF	VDO VERTICAL ACTIVE AREA LINE SIZE				
	26	VOP	0	3	VDO VERTICAL ACTIVE AREA ODD POSITION				
	27	CLT	0	FF	VDO CLAMP PULSE OUTPUT TIMING				
	28	CLW	0	7	VDO CLAMP PULSE WIDTH				
	29	VYD	0	3F	VDO ANALOG INPUT Y/C DELAY CORRECTION				
	2A	VCR	0	1	VDO CROMA SIGNAL ORDER				
	2B	VDI	0	3	VDO DIGITAL ANALOG INPUT SELECTION				
3CM	00	FRZ	0	1	EXTERNAL MEMORY TEST BIT		02 (4)	UPD64082(B8H)	
	01	NRM	0	3	NOISE REDUCTION OPERATION MODE		00 (7-6)		
	02	YCO	0E	0F	Y/C SIGNAL OUTPUT SELECTION		00 (3-0)		
	03	SYC	1	3	SYSTEM CLOCK SELECTION		01 (7-6)		
	04	STD	0	3	STANDARD/NON-STANDARD OPERATION SELECTION		01 (5-4)		
	05	MSS	0	3	INTER-FRAME/INTER-LINE OPERATION SELECTION		01 (3-2)		
	06	KIL	3	3	KILLER/NON-KILLER OPERATION SELECTION		01 (1-0)		
	07	EAD	0	1	EXTERNAL Y-ADC SWITCH		02 (5)		
	08	ECS	1	3	EXTERNAL C-SYNC INPUT SELECTION		02 (1-0)		
	09	CPP	2	3	ADC INPUT LEVEL & CLUMP PULSE WIDTH SELECTION		03 (7-6)		
	0A	PWR	0	1	ADC INPUT WIDTH SWITCH		09 (7)		
	0B	HDP	5	7	HORIZONTAL PHASE ADJUSTMENT		03 (5-3)		
	0C	CDL	4	7	C-SIGNAL ADJUSTMENT		03 (2-0)		

Adjustment Item Table

Category	Functionality		Initial	Range	Function	Table & Note	Register	Device & Slave	RAM Address
	No.	Name	Data				(Bit Range)	Address	(Bit Range)
3CM	0D	DYC	2	0F	DY DETECTION CORING LEVEL ADJUSTMENT	NR MODE (0-3)	04 (7-4)	UPD64082(B8H)	
	0E	DYG	0A	0F	DY DETECTION GAIN ADJUSTMENT	NR MODE (0-3)	04 (3-0)		
	0F	DCC	5	0F	DC DETECTION CORING LEVEL ADJUSTMENT	NR MODE (0-3)	05 (7-4)		
	10	DCG	5	0F	DC DETECTION GAIN ADJUSTMENT	NR MODE (0-3)	05 (3-0)		
	11	YNR	1	0F	YNR NON-LINEAR FILTER SETUP		06 (7-4)		
	12	CNR	1	0F	CNR NON-LINEAR FILTER SETUP		06 (3-0)		
	13	WSC	1	3	NOISE DETECTION CORING ADJUSTMENT		08 (7-6)		
	14	VTH	1	3	HYSTERESIS SELECTION FOR H-SYNC NON-STANDARD	TV/VIDEO	08 (5-4)		
	15	VTR	1	3	SENSITIVITY SELECTION FOR H-SYNC NON-STANDARD	TV/VIDEO	08 (3-2)		
	16	LDR	2	3	SENSITIVITY SELECTION FOR FRAME-SYNC NON-STANDARD	TV/VIDEO	08 (1-0)		
	17	VAP	4	7	GAIN ADJUSTMENT FOR VERTICAL SHAPE CORRECTION	PICTURE MODE	0A (7-5)		
	18	VAI	0C	1F	VANISHING ADJUSTMENT FOR VERTICAL SHAPE CORRECTION	PICTURE MODE	0A (4-0)		
	19	TST	0	1	TEST BIT		0B (6)		
	1A	YPF	3	3	CENTER FREQUENCY SELECTION FOR Y-PEAKING BPF	PICTURE MODE	0B (5-4)		
	1B	YPG	8	0F	GAIN ADJUSTMENT FOR Y-PEAKING BPF	PICTURE MODE	0B (3-0)		
	1C	VSE	0A	0F	LINE COMB FILTER SETUP		0C (7-4)		
	1D	CCN	0	1	C-SIGNAL SPLIT FILTER SWITCH		0C (3)		
	1E	COS	0	1	C-SIGNAL DELAY SWITCH AT NOISE REDUCTION		0C (2)		
	1F	SDC	0	1	DC DETECTION SENSITIVITY SWITCH		0C (0)		
	20	SDY	1	1	DY DETECTION LOWER-LEVEL SENSITIVITY SWITCH		0D (5)		
	21	D2G	4	7	D2 GAIN SELECTION		0D (2-0)		
	22	YHC	0	3	Y-SIGNAL HIGHER-LEVEL CORING SELECTION	PICTURE MODE	10 (7-6)		
	23	YHG	0	1	Y-SIGNAL HIGHER-LEVEL GAIN SWITCH	PICTURE MODE	10 (5)		
	24	SHT	0	0F	NON-STANDARD DETECTION & H/VCOUNTER TEST BITS		11 (7-4)		
	25	CLK	8	0F	CLOCK TEST BITS		11 (3-0)		
	26	PLL	0D	0F	PLL FILTER SETUP		12 (7-4)		
	27	KRF	3	0F	KILLER DETECTION REFERENCE ADJUSTMENT		12 (3-0)		
	28	HSL	0C	0F	H-SYNC SLICE LEVEL ADJUSTMENT		13 (7-4)		
	29	VSL	8	0F	V-SYNC SLICE LEVEL ADJUSTMENT		13 (3-0)		
	2A	BPS	4	0F	INTERNAL BURST GATE START POSITION ADJUSTMENT		14 (7-4)		
	2B	BPW	0A	0F	INTERNAL BURST GATE WIDTH ADJUSTMENT		14 (3-0)		
	2C	ADC	3	3	ADC CLOCK DELAY SELECTION		15 (7-6)		
	2D	APD	1	1	ADC POWER-DOWN SWITCH		15 (5)		
	2E	NSD	1	1	NON-STANDARD DETECTION TEST BIT		15 (4)		322
	2F	SPD	2	3	MEMORY POWER-DOWN SWITCH		16 (7)		323
	30	CNT	0	1	CNR TEST BIT		17 (7)		324
2CM	00	APA	1	1	2D COMB APACON ON/OFF	PICTURE MODE	#2 (2-1)	CXA2069Q(90H)	
DSP	00	DUL	3	3	DIR UNLOCK DETECTION MODE			TC9446F(3AH)	
	01	DIM	3	3	DIGITAL INPUT MODE				
	02	TFM	5A	7F	TRUSURROUND FRONT MINUS	VDD/VDP	2764/276D		
	03	TFP	12	7F	TRUSURROUND FRONT PLUS	VDD/VDP	2765/276E		

Adjustment Item Table

Category	Functionality		Initial	Range	Function	Table & Note	Register	Device & Slave	RAM Address
	No.	Name	Data				(Bit Range)	Address	(Bit Range)
DSP	04	TCE	40	7F	TRUSURROUND CENTER	VDD/VDP	2766/276F	TC9446F(3AH)	
	05	TS1	20	FF	TRUSURROUND SURROUND #1	VDD/VDP	2767		
	06	TS2	20	7F	TRUSURROUND SURROUND #2	VDD/VDP	2770		
	07	TSP	68	7F	TRUSURROUND SURROUND PLUS	VDD/VDP	2768/2771		
	08	TSM	68	7F	TRUSURROUND SURROUND MINUS	VDD/VDP	2769/2772		
	09	LFE	5A	7F	LOW FREQUENCY EFFECT		276A/2773		31E
	0A	BHL	40	7F	BBE EFFECT 1 FOR BBE HIGH	VDD/VDP/TRS/SIM/OFF	278F		321
	0B	BHH	48	7F	BBE EFFECT 2 FOR BBE HIGH	VDD/VDP/TRS/SIM/OFF	2790		322
	0C	BLL	33	7F	BBE EFFECT 1 FOR BBE LOW	VDD/VDP/TRS/SIM/OFF	278F		323
	0D	BLH	33	7F	BBE EFFECT 2 FOR BBE LOW	VDD/VDP/TRS/SIM/OFF	2790		324
	0E	DLR	7	7	DELAY SELECTION AT DSP RESET	VDD/VDP/TRS/SIM/OFF	2790		324
	0F	BBE	1	3	BBE SELECTION	SOUND MODE EXCEPT PERSONAL			324
DYC	00	SBH	1F	3F	H STATIC CONV1	50/60Hz	0D (5-0)	CXA8070P(DEH)	
	01	YBU	1F	3F	H STATIC CONV2 UPPER	50/60Hz	0B (5-0)		
	02	YBL	1F	3F	H STATIC CONV2 LOWER	50/60Hz	0C (5-0)		
	03	RSA	1F	3F	H DYNAMIC CONV1 LEFT	50/60Hz	05 (5-0)		
	04	LSA	1F	3F	H DYNAMIC CONV1 RIGHT	50/60Hz	0A (5-0)		
	05	LUB	1F	3F	H DYNAMIC CONV2 TOP LEFT	50/60Hz	01 (5-0)		
	06	LLB	1F	3F	H DYNAMIC CONV2 BOTTOM LEFT	50/60Hz	02 (5-0)		
	07	RUB	1F	3F	H DYNAMIC CONV2 TOP RIGHT	50/60Hz	06 (5-0)		
	08	RLB	1F	3F	H DYNAMIC CONV2 BOTTOM RIGHT	50/60Hz	07 (5-0)		
TXT	00	TXH	4B	FF	TELETEXT HORIZONTAL POSITION		99 (7-0)	SAA5261(58H)	352 (1-0)
	01	TXV	0E	3F	TELETEXT VERTICAL POSITION		9A (5-0)		352 (5-4)
OPM	00	OSH	12	3F	OSD H POSITION		1F1	CXP750096(60H)	18D (7-2)
	01	FW1	0	3F	OSD ODD/EVEN FIELD WINDOW SETUP #1		1F9	OPTION-MISC	
	02	FW2	3	3F	OSD ODD/EVEN FIELD WINDOW SETUP #2		1F9		
	03	OHO	9	0F	OSD H POSITION OFFSET FOR INDEX		1F1		
	04	ICO	1	3	INDEX "VIDEO" OSD HORIZONTAL OFFSET (12+1 INDEX)				
	05	ISO	2	3	INDEX SUB-SCREEN OSD HORIZONTAL OFFSET				
	06	IL1	1C	3F	INDEX SUB-SCREEN OSD 1ST LINE VERTICAL POSITION		1F2		
	07	IVO	2F	3F	INDEX SUB-SCREEN OSD VERTICAL OFFSET		1F2/1F3		
	08	COM	0	03	COMB OPERATION SELECTION				347 (7-6)
	09	APC	1	1	APC SWITCH				346 (5)
	0A	TSY	0	03	TV SYSTEM SELECTION UNDER SEARCHING WITH AUTO TV SYSTEM				346 (4-3)
	0B	MUT	0	1	NO SIGNAL MUTE				346 (0)
	0C	AFM	1	1	AUTO FM SWITCH				346 (1)
	0D	TVO	3	7	V-ANGLE CORRECTION TO PICTURE ROTATION				347 (2-0)
	0E	DBL	0	1	DISABLE BLUEBACK FUNCTION				346 (2)
	0F	SSO	1	3	SPEED CH SEARCH SELECTION				346 (5)
	10	TRP	0	3F	MPEG/JPEG NOISE REDUCTION FOR EACH INPUT				18E (5-0)
OPB	00	OP1	E7	FF	OPTIONAL BITS 1 (SEE THE SPECIFIED SHEET)			OPTION-BITS	4A
	01	OP2	13	FF	OPTIONAL BITS 2 (SEE THE SPECIFIED SHEET)				4B

NOTE

- shaded items are fixed data.
- Standard data listed on the Adjustment Item Table are reference values, therefore it may be different for each model and for each mode.
- Note for Different Data: Those are the standard data values written on the microprocessor. Therefore, the data values of the modes and stored respectively in the memory.
  In case of a device replacement, adjustment by rewriting the data value is necessary for some items.

OPTION NOTE

COM Comb Operation Selection
00 = automatic operation (depends on color system status),
01 = no comb operation,
02 = forced 2D-comb operation,
03 = forced 3D-comb operation

TSY TV System Selection for Auto TV System
00 = B/G, 01 = I, 10 = D/K, 11 = M

SSO Speed CH Search Selection
00 = normal, 01 = 4 times, 10 = 6 times, 11 = 8 times

TRP MPEG/JPEG Noise Reduction

Input	–	–	TV	Video 1	Video 2	Video 3	Video 4	DVD

OP1 Items

Item	TOP	NICAM	HDEV	Reserved	–	DVD Input	AV Input	
KV-ES29M80	1	1	1	0	0	1	1	1
KV-ES29M81	1	1	1	0	0	1	1	1
KV-ES29M90	1	1	1	0	0	1	1	1

AV Input 00 = no AV Input, 01 = 1 AV Input, 10 = 3 AV Input, 11 = 4 AV Input

OP2 Items

Item	–	–	Korean Mode	Auto TV sys	US ST	SSV Model	OSD	Language
KV-ES29M80	0	0	0	1	0	0	1	1
KV-ES29M81	0	0	0	1	0	0	1	1
KV-ES29M81	0	0	0	1	0	0	1	1

5-3. PICTURE QUALITY ADJUSTMENTS

SUB COLOR ADJUSTMENT (SCL)

1. Set to service mode.
2. Input RF PAL colorbar signal.
   Set A/V control to PERSONAL.
3. Set to VP7 (Service mode) "DYC" = 0
4. Set the following condition.
   Picture to 100%, Color to 0% and Bright to 0%.
5. Connect an oscilloscope to the pin ③ (BLUE) of CN705, C board.
6. Using the [1] and [4] buttons select SAJ 3 (Service mode) "SCL".
7. Using the [3] and [6] buttons on the Remote Commander to adjust to VB2 = VB3 = VB4 with [3] and [6].
8. Write into the memory by pressing "MUTING" then "0".
9. Input NTSC colorbar signal to VIDEO1 and select VIDEO1 input.
10. Adjust as step 4. and 8. by receving NTSC colorbar.
11. Reset to VP 7 (Service mode) "DYC" = 1.

-H-TRAPIZIUM ADJUSTMENT

1. Input a cross hatch/dot signal.
2. Adjust DAC 4 HTR to make H-Trapizoid distortion best.

SUB CONTRAST, SUB HUE, SUB COLOR

Adjustment condition

SAJ	00	PIC	3F
	00	DYC	0
	0E	CLO	7
	10	HUO	7
	13	PIO	0
JGL	04	BBT	0
	05	LML	3

PICTURE QUALITY	:	HI-FINE
ECO MODE	:	OFF
WIDE MODE	:	OFF
DRC-MF	:	DRC1250

INPUT SIGNAL

Video Color Bar (White and Color 75%)
RF Color Bar (White and Color 75%)

CAUTION

After the above Adjustments, these adjustment parameters must be recovered to the original condition.

VR ; R100 (the pin 6 of CN1100)
VB ; B100 (the pin 7 of CN1100)

1. NTSC VIDEO INPUT

Input signal ; NTSC color bar, 75% to Video 1.
[TWIN] mode, [Service] mode.

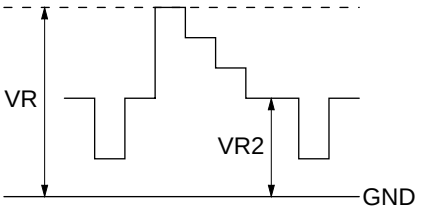
(i) SUB CONTRAST

Condition :

SAJ	00	PIC	3F
	02	COL	0
JGL	01	RGB	4
SAJ	13	PIO	0

Adjusting parameter:

LEFT ; YCT 08 YOL
RIGHT ; SYC 08 YOL



VR1 - VR2 = VR = 1.88 ± 0.07 (Vp-p)

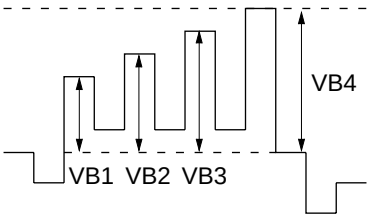
(ii) SUB HUE/SUB COL

Condition :

SAJ	02	COL	1F
JGL	01	RGB	7
SAJ	10	HUO	7

Adjusting parameter:

LEFT ; YCT 0A COL
YCT 00 TNT
RIGHT ; SYC 0A COL
SYC 00 TNT



VB1 = VB4 ± 50 mV
VB2 = VB3 ± 50 mV

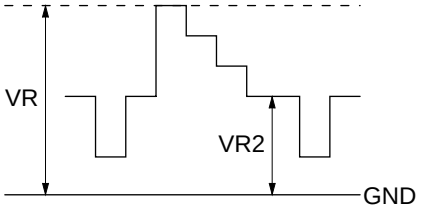
2. NTSC RF INPUT

Input signal ; NTSC RF color bar, 75%.
[TWIN] mode, [Service] mode.

(i) SUB CONTRAST

Condition : SAJ 00 PIC 3F
02 COL 0
JGL 01 RGB 4

Adjusting parameter:
LEFT ; YCT 04 SCT
RIGHT ; SYC 04 SCT

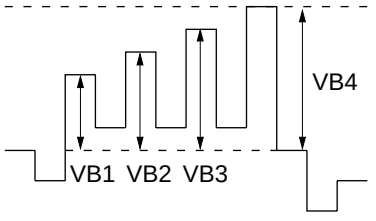


VR1 - VR2 = VR = 1.88 ± 0.07 (Vp-p)

(ii) SUB HUE/SUB COL

Condition : SAJ 02 COL 1F
JGL 01 RGB 7
SAJ 10 HUO 7

Adjusting parameter:
LEFT ; YCT 03 SCL
YCT 00 TNT
RIGHT ; SYC 03 SCL
SYC 00 TNT



VB1 = VB4 ± 50 mV
VB2 = VB3 ± 50 mV

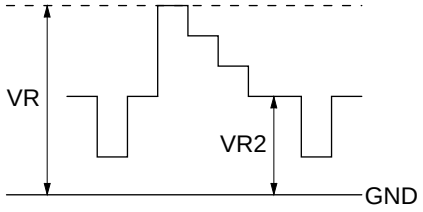
3. PAL VIDEO INPUT

Input signal ; PAL color bar, 75% to Video 1.
[TWIN] mode, [Service] mode.

(i) SUB CONTRAST

Condition : SAT 00 PIC 3F
SAT 02 COL 0
JGL 01 RGB 4

Adjusting parameter:
LEFT ; YCT 04 SCT
RIGHT ; SYC 04 SCT

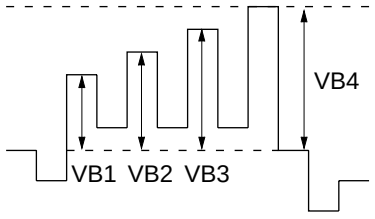


VR1 - VR2 = VR = 1.88 ± 0.07 (Vp-p)

(ii) SUB HUE/SUB COL

Condition : SAJ 02 COL 1F
JGL 01 RGB 7

Adjusting parameter:
LEFT ; YCT 03 SCL
SAJ 10 HUO
RIGHT ; SYC 03 SCL



VB1 = VB4 ± 50 mV
VB2 = VB3 ± 50 mV

3. PAL RF INPUT

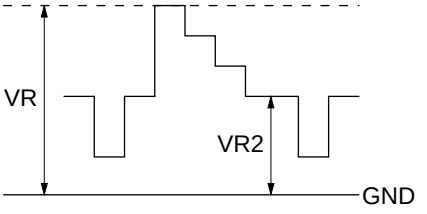
Input signal ; PAL RF color bar, 75%.
[TWIN] mode, [Service] mode.

(i) SUB CONTRAST

Condition : SAJ 00 PIC 3F
SAJ 02 COL 0
JGL 01 RGB 4

Adjusting parameter:

LEFT ; YCT 04 SCT
RIGHT ; SYC 04 SCT



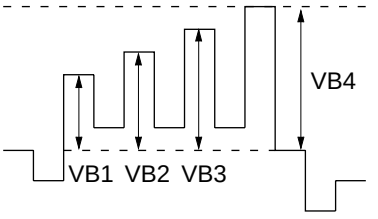
VR1 - VR2 = VR = 1.88 ± 0.07 (Vp-p)

(ii) SUB HUE/SUB COL

Condition : SAJ 02 COL 1F
JGL 01 RGB 7

Adjusting parameter:

LEFT ; YCT 03 SCL
SAJ 10 HUO
RIGHT ; SYC 03 SCL



VB1 = VB4 ± 50 mV
VB2 = VB3 ± 50 mV

5-4. DEFLECTION ADJUSTMENTS

FOR DRC 1250

1. Set to Service Mode.
2. Input a Pal cross hatch/dot signal.
3. Set the following condition.
   Picture Mode to [DYNAMIC], Picture Rotation to [+/–0] and Eco Mode to OFF.
4. Set to DRC 1250 mode.
5. Using the [1] and [4] buttons select category GEO (Service Mode).
6. Select and adjust the following items to obtain optimum image. Raise/lower the data with the [3] and [6] buttons,

1	00	VSZ	V SIZE
2	04	HSZ	H SIZE
3	01	VPS	V POSITION
4	05	HPS	H POSITION
5	03	SCO	S CORRECTION
6	02	VLN	V LINEARITY
7	0B	BOW	AFC BOW
8	06	PAP	PIN AMP
9	07	UPN	UPPER CORNER PIN
10	08	LPN	LOWER CORNER PIN
11	09	TRZ	TRAPEZIUM

7. Using the [1] and [4] buttons select category DAC (Service Mode).
8. Select and ad List the following items to obtain optimum image. Raise/lower the data with the [3] and [6] buttons.

1	01	HLN	H LINEARITY
2	00	HCT	H CENTER

9. Select “GEO 04 HSZ” with the [1] and [4] buttons.
10. Confirm the H Size condition. If necessary, adjust the H SIZE to get a best condition.
11. Write into the memory by pressing [MUTING] then [0].

FOR DRC 100 MODE

12. Set to DRC 100 mode.
13. Repeat Step 5, Step 6 and Step 7.
14. Write “DAC 00 HCT DRC 100 Mode” as “DAC 00 HCT DRC 1250 Mode” write “DAC 01 HLN DRC 100 Mode” as DAC 01 HLN DRC 1250 Mode”

FOR PIP MODE

15. Set to PIP mode.
16. Repeat Step 5 and Step 6.
17. Write into the memory by pressing [MUTING] then [0].

FOR TWIN MODE

18. Set to TWIN Mode.
19. Using tile 1 and 4 buttons select category GEO (Service Mode).
20. Select and adjust the following items to obtain optimum image. Raise/lower the data with the [3] and [6] buttons.

1	01	VPS	V POSITION
2	05	HPS	H POSITION
3	06	PAP	PIN AMP
4	09	TRZ	TRAPEZIUM

21. Write into the memory by pressing [MUTING] then [0].

FOR INDEX M0DE

22. Set to Index Mode.
23. Repeat Step 5 and Step 6.
24. Write into the memory by pressing [MUTING] then [0].

FOR WIDE MODE

25. Set to WIDE MODE.
26. Using the [1] and [4] buttons select category GEO (Service Mode).
27. Select and adjust the following items to obtain optimum image. Raise/lower the data with the [3] and [6] buttons.

1	00	VSZ	V SIZE
2	01	VPS	V POSITION
3	05	HPS	H POSITION
4	06	PAP	PIN AMP
5	09	TRZ	TRAPEZIUM

28. Input a NTSC cross hatch/dot signal and repeat all above steps.

5-5. A BOARD ADJUSTMENT AFTER IC003 (MEMORY) REPLACEMENT

When replacing IC003 and IC004 (MEMORY), be sure to change IC001 (µ-COM) to the following new IC at the same time.

MODEL	IC001 (µ-CON)
KV-ES29M80/M81/M90	CXP750096-012Q

1. Enter to Service Mode.

2. Press commander buttons [5] and [0] (Data Initialize), and [2] and [0] (Data Copy) to initialize the data.

3. Call each item number and check if the respective screen shows the normal picture.
   In cases where items are not well adjusted, rectify the items with fine adjustment.
   Write the data per each item number ([MUTING] +[0]).

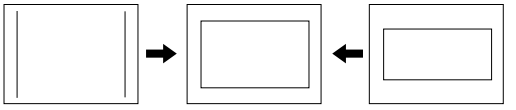
4. Select item numbers “OPB0” (OP1), “OPB1” (OP2) and respectively set the bit per model with command buttons [3] and [6].

5. Press commander buttons [8] and [0] (Test Normal) to return to the data that was set on the shipment from the factory.
   (This will also cancel Service Mode.)

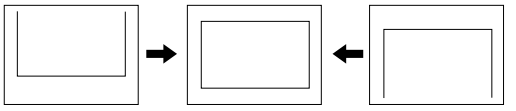
5-6. PICTURE DISTORTION ADJUSTMENT (1)

Item Number 00 – 0B

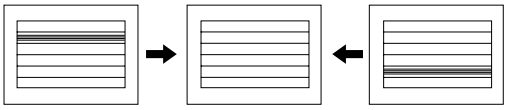
GEO 0 VSZ (V SIZE)



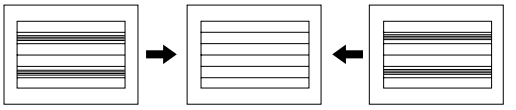
GEO 1 VPS (V POSITION)



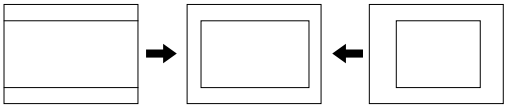
GEO 2 VLN (V LINEARITY)



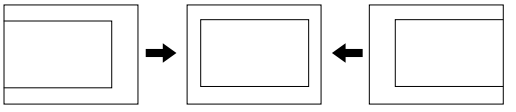
GEO 3 SCO (VERTICAL S-Correction)



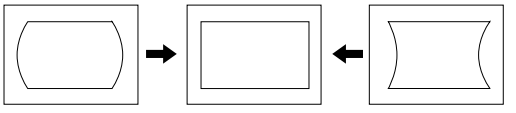
GEO 4 HSZ (H SIZE)



GEO 5 HPS (H POSITION)

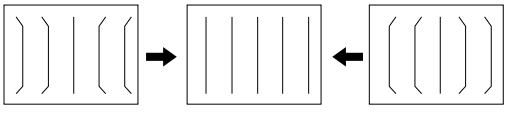


GEO 6 PAP (PIN AMP)

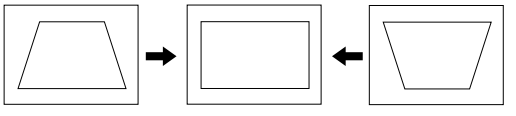


GEO 07 UPN (UPPER CORNER PIN)

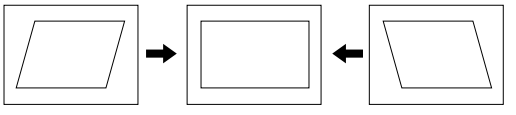
GEO 08 LPN (LOWER CORNER PIN)



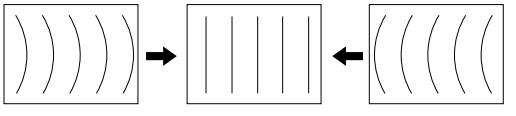
GEO 9 TRZ (TRAPEZIUM)



GEO 0A AGL (AFC.ANGLE)

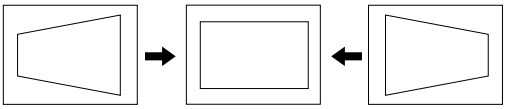


GEO 0B BOW (AFC.BOW)



PICTURE DISTORTION ADJUSTMENT (2)

H-TRAPEZOID (DAC 4 HTR)

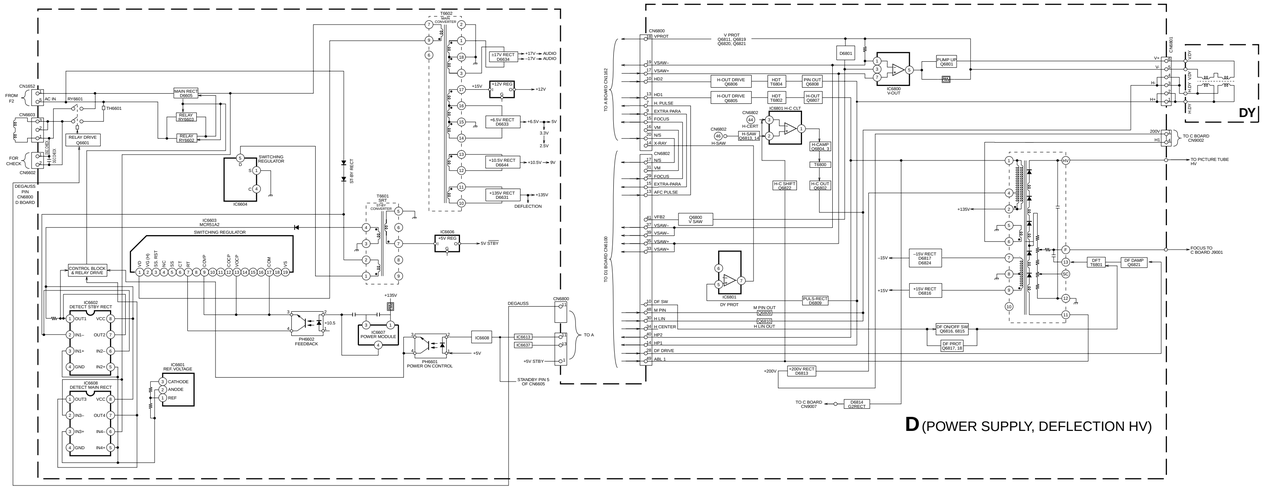


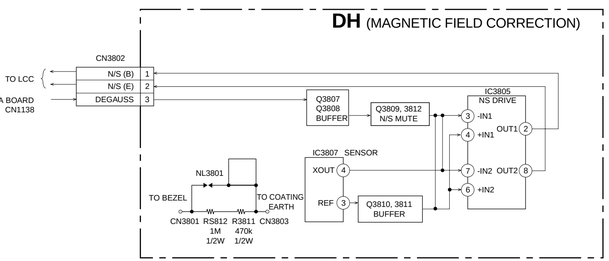
MEMO

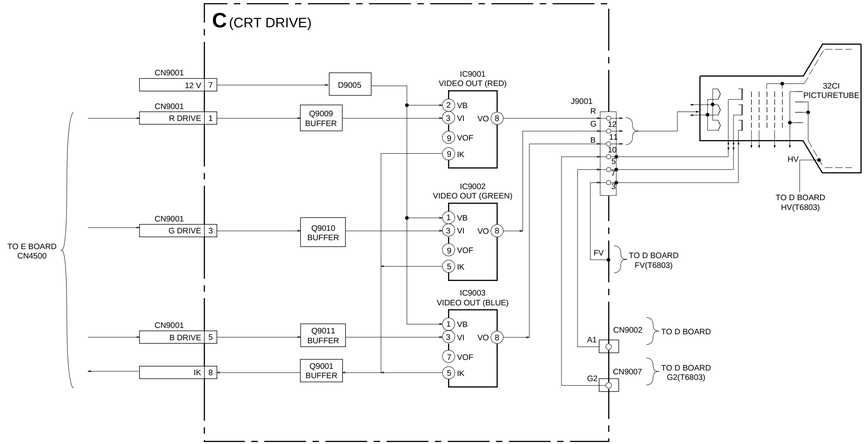
MEMO

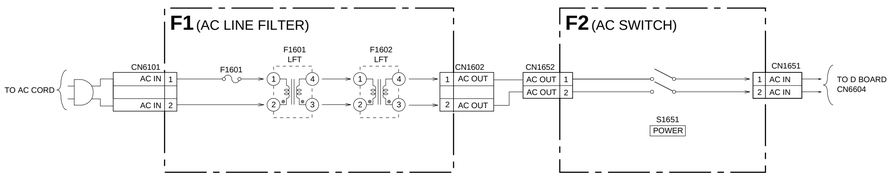
SECTION 6
DIAGRAMS

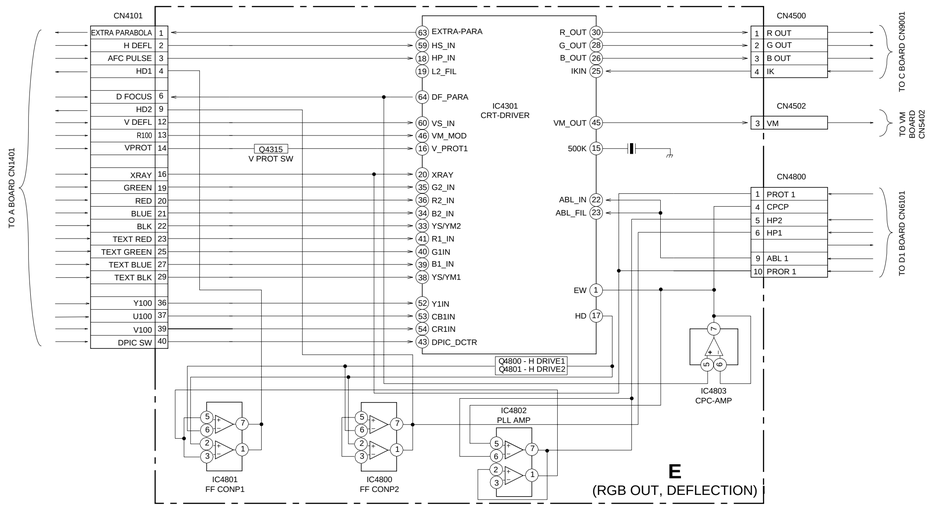
6-1. BLOCK DIAGRAM



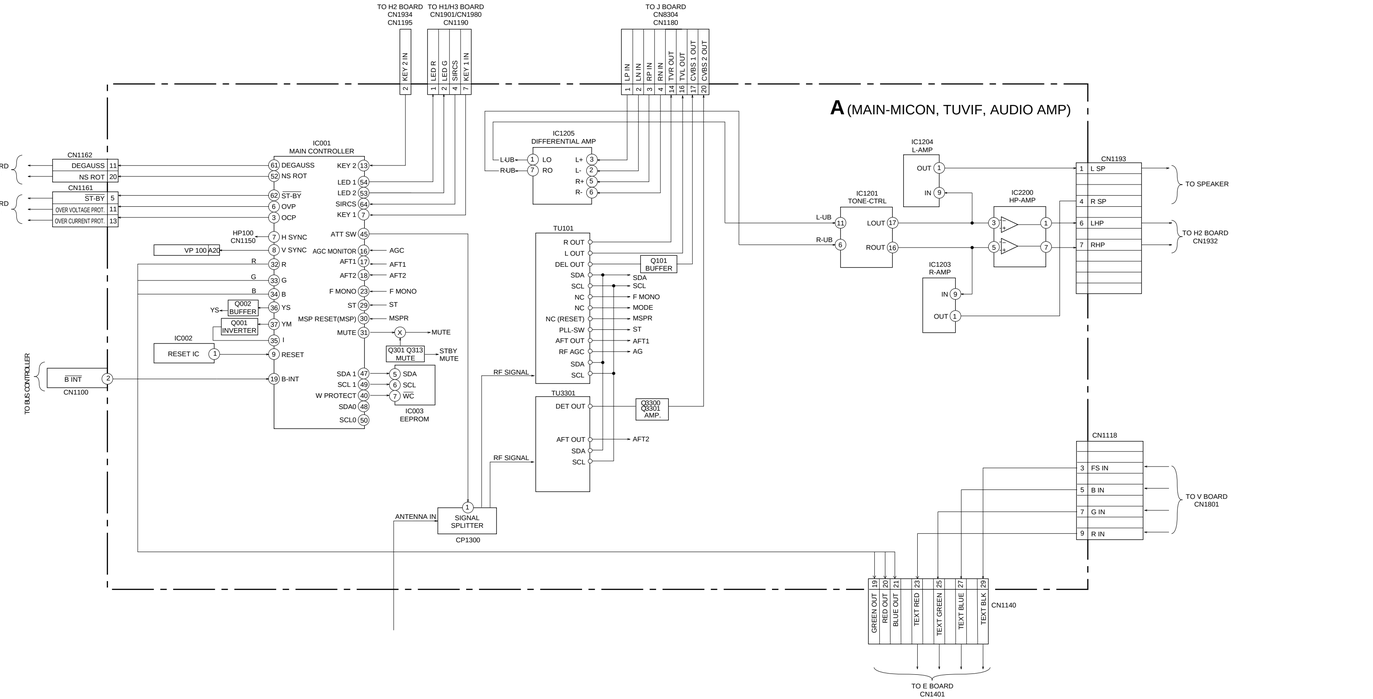


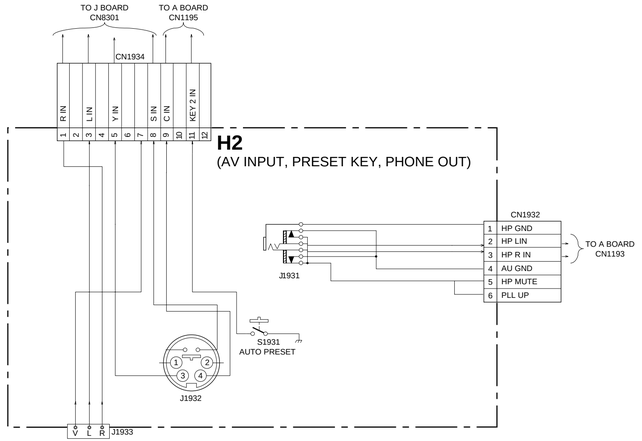


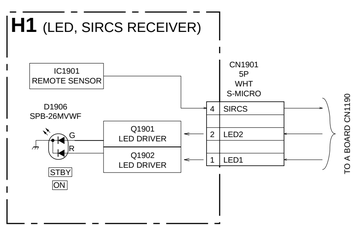


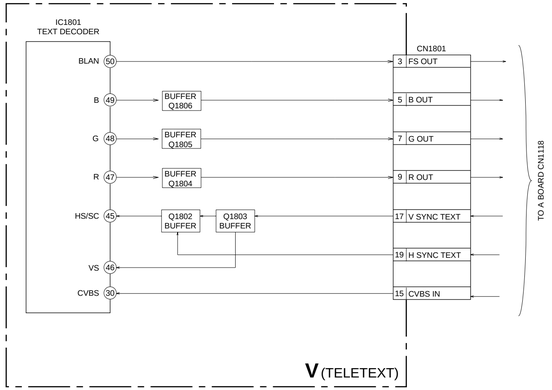


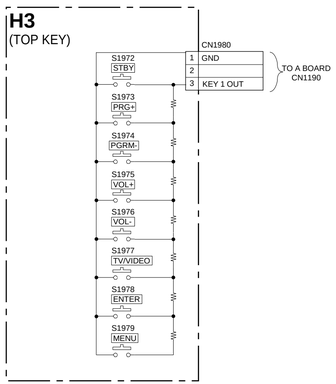
KV-ES29M80/ES29M81/ES29M90 KV-ES29M80/ES29M81/ES29M90
RM-916 RM-916

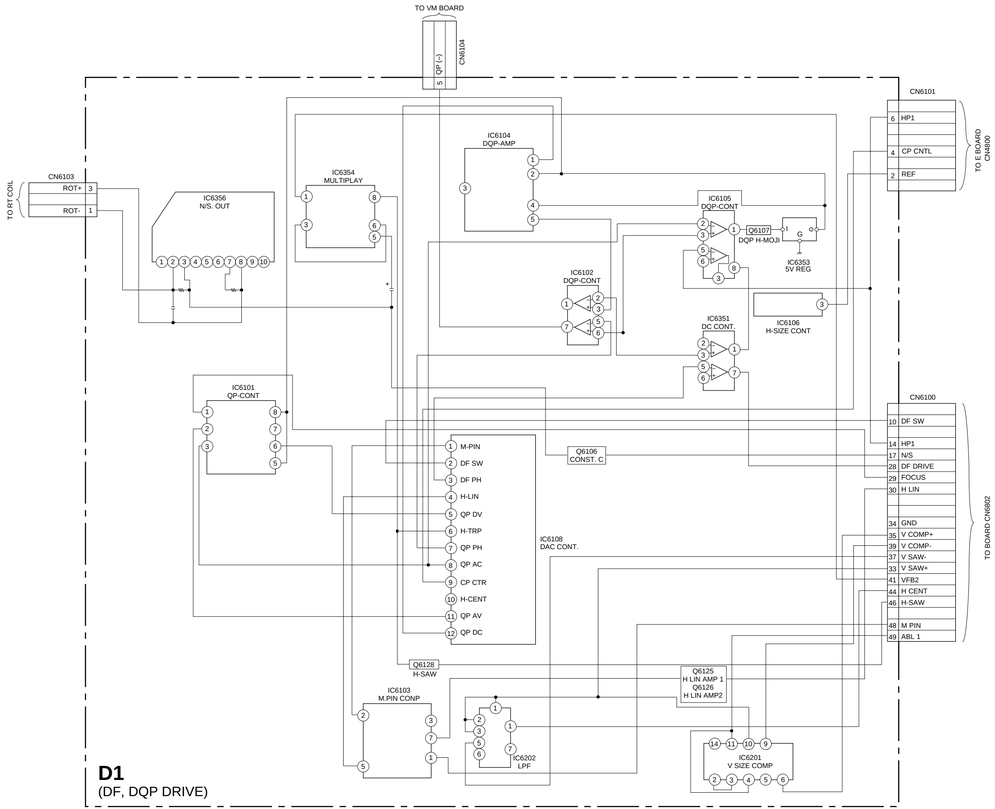


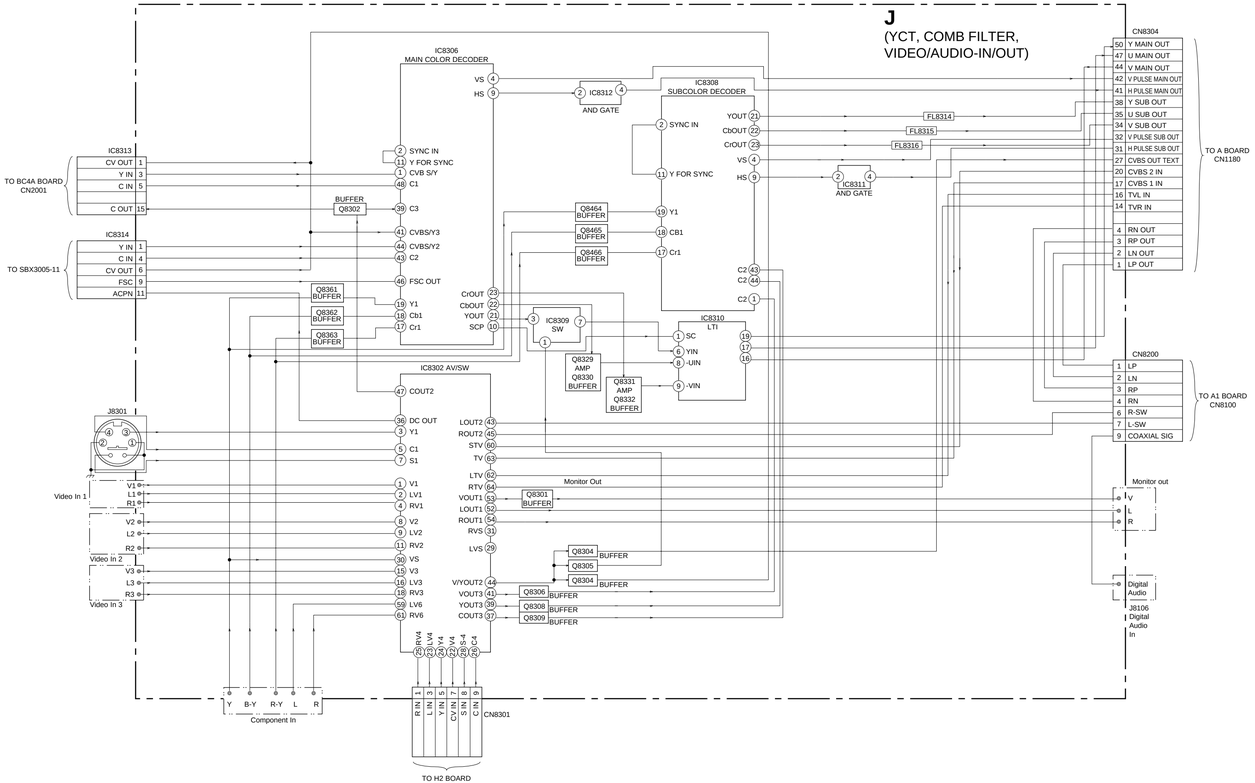

TO J BOARD CN8301
TO A BOARD CN1195
CN1934
R IN
L IN
V IN
S IN
C IN
KEY 2 IN
H2
(AV INPUT, PRESET KEY, PHONE OUT)
CN1932
1 HP GND
2 HP LIN
3 HP R IN
4 AU GND
5 HP MUTE
6 PLL UP
TO A BOARD CN1193
J1931
S1931
AUTO PRESET
J1932
V L R
J1933


H1 (LED, SIRCS RECEIVER)
IC1901
REMOTE SENSOR
D1906
SPB-26MVWF
G
R
STBY
ON
Q1901
LED DRIVER
Q1902
LED DRIVER
CN1901
5P
WHT
S-MICRO
4 SIRCS
2 LED2
1 LED1
TO A BOARD CN1190

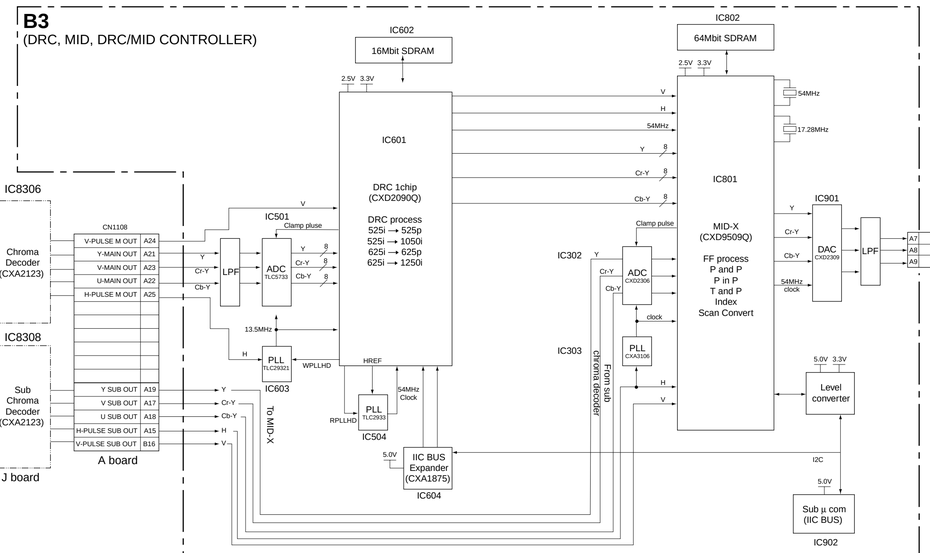

IC1801
TEXT DECODER
BLAN 50
B 49
G 48
R 47
HS/SC 45
VS 46
CVBS 30
BUFFER Q1806
BUFFER Q1805
BUFFER Q1804
Q1802 BUFFER
Q1803 BUFFER
CN1801
3 FS OUT
5 B OUT
7 G OUT
9 R OUT
17 V SYNC TEXT
19 H SYNC TEXT
15 CVBS IN
TO A BOARD CN1118
V (TELETEXT)

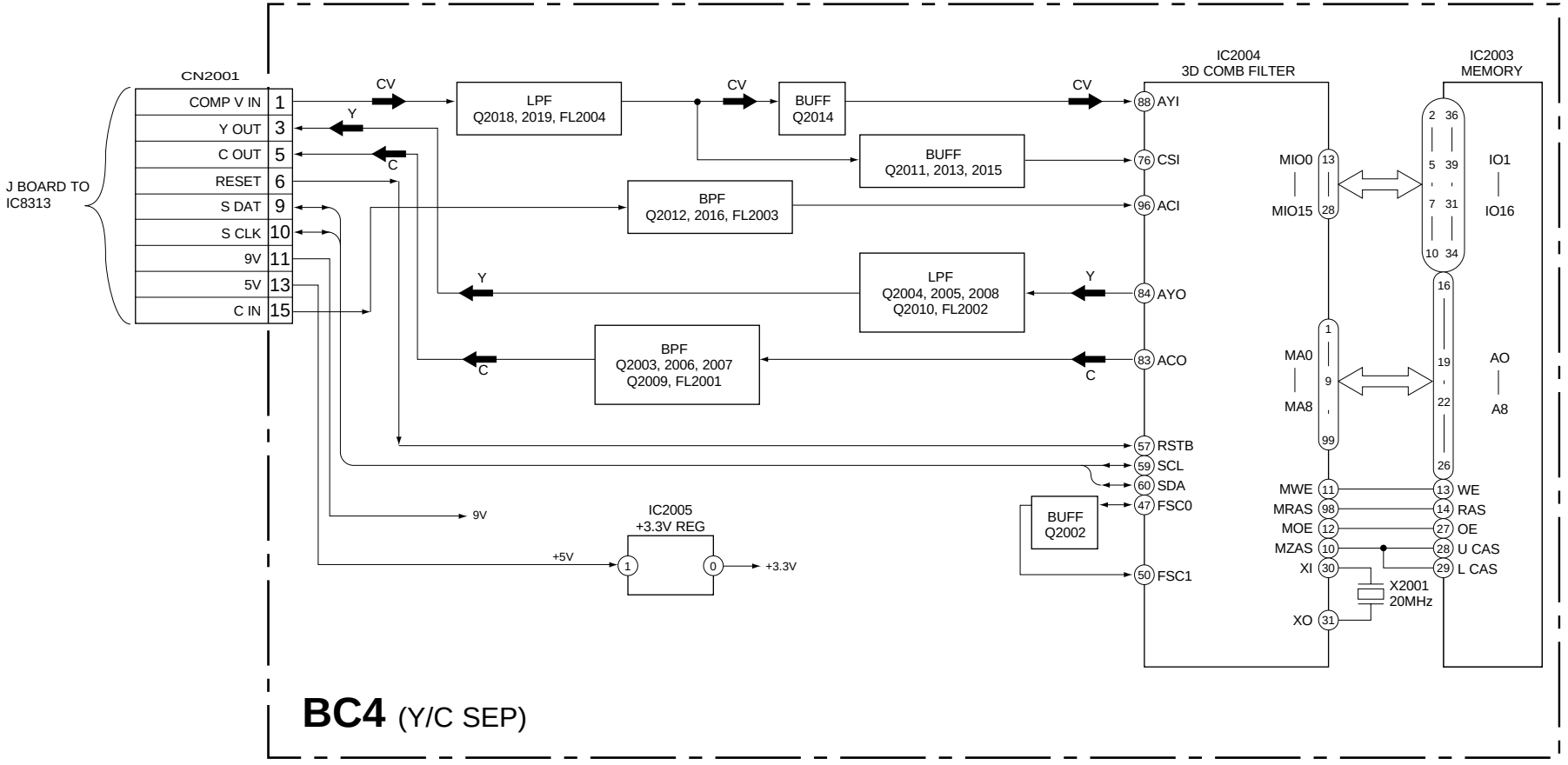

H3
(TOP KEY)
CN1980
1 GND
2
3 KEY 1 OUT
TO A BOARD CN1190
S1972 STBY
S1973 PRG+
S1974 PGRM-
S1975 VOL+
S1976 VOL-
S1977 TV/VIDEO
S1978 ENTER
S1979 MENU


TO VM BOARD
CN6104
QP (-) 5
CN6103
ROT+ 3
ROT- 1
TO PT COIL
IC6356
N/S. OUT
IC6354
MULTIPLAY
IC6104
DQP-AMP
IC6105
DQP-CONT
Q6107
DQP H-MOJI
IC6353
5V REG
IC6102
DQP-CONT
IC6106
H-SIZE CONT
IC6351
DC CONT.
IC6101
QP-CONT
CN6101
6 HP1
4 CP CNTL
2 REF
TO E BOARD CN4900
CN6100
10 DF SW
14 HP1
17 N/S
28 DF DRIVE
29 FOCUS
30 H LIN
34 GND
35 V COMP+
39 V COMP-
37 V SAW-
33 V SAW+
41 VFB2
44 H CENT
46 H-SAW
48 M PIN
49 ABL 1
TO BOARD CN6802
1 M-PIN
2 DF SW
3 DF PH
4 H-LIN
5 QP DV
6 H-TRP
7 QP PH
8 QP AC
9 CP CTR
10 H-CENT
11 QP AV
12 QP DC
IC6108
DAC CONT.
Q6106
CONST. C
Q6128
H-SAW
IC6103
M.PIN CONP
Q6125
H LIN AMP 1
Q6126
H LIN AMP2
IC6202
LPF
IC6201
V SIZE COMP
D1
(DF, DQP DRIVE)

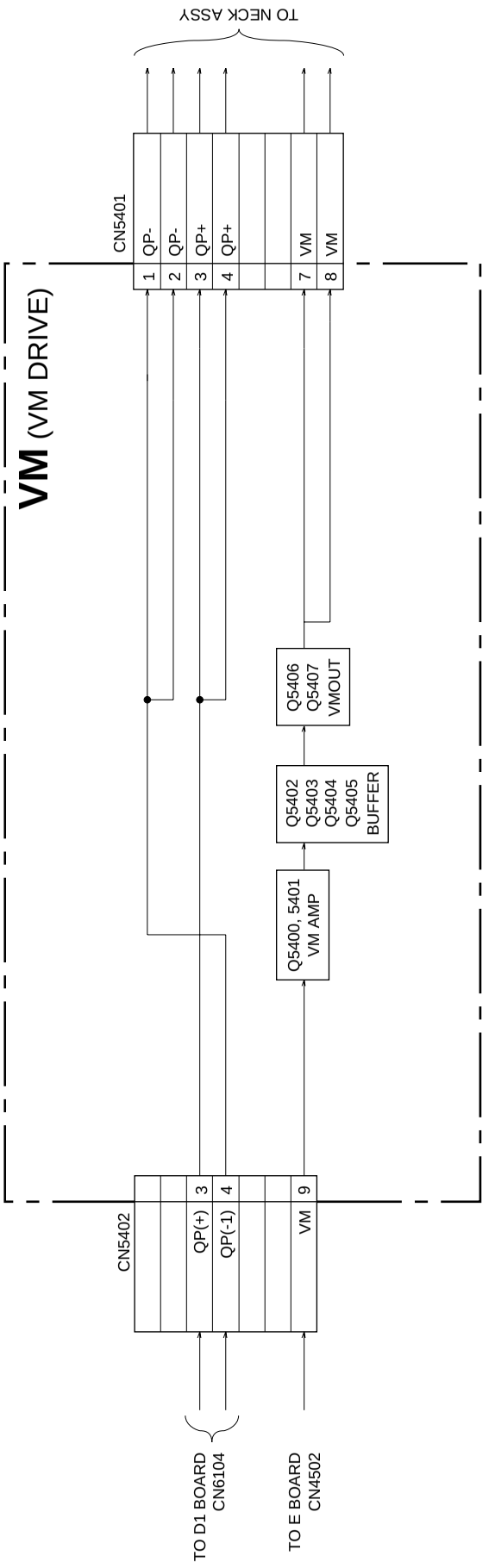


KV-ES29M80/ES29M81/ES29M90 KV-ES29M80/ES29M81/ES29M90
RM-916 RM-916

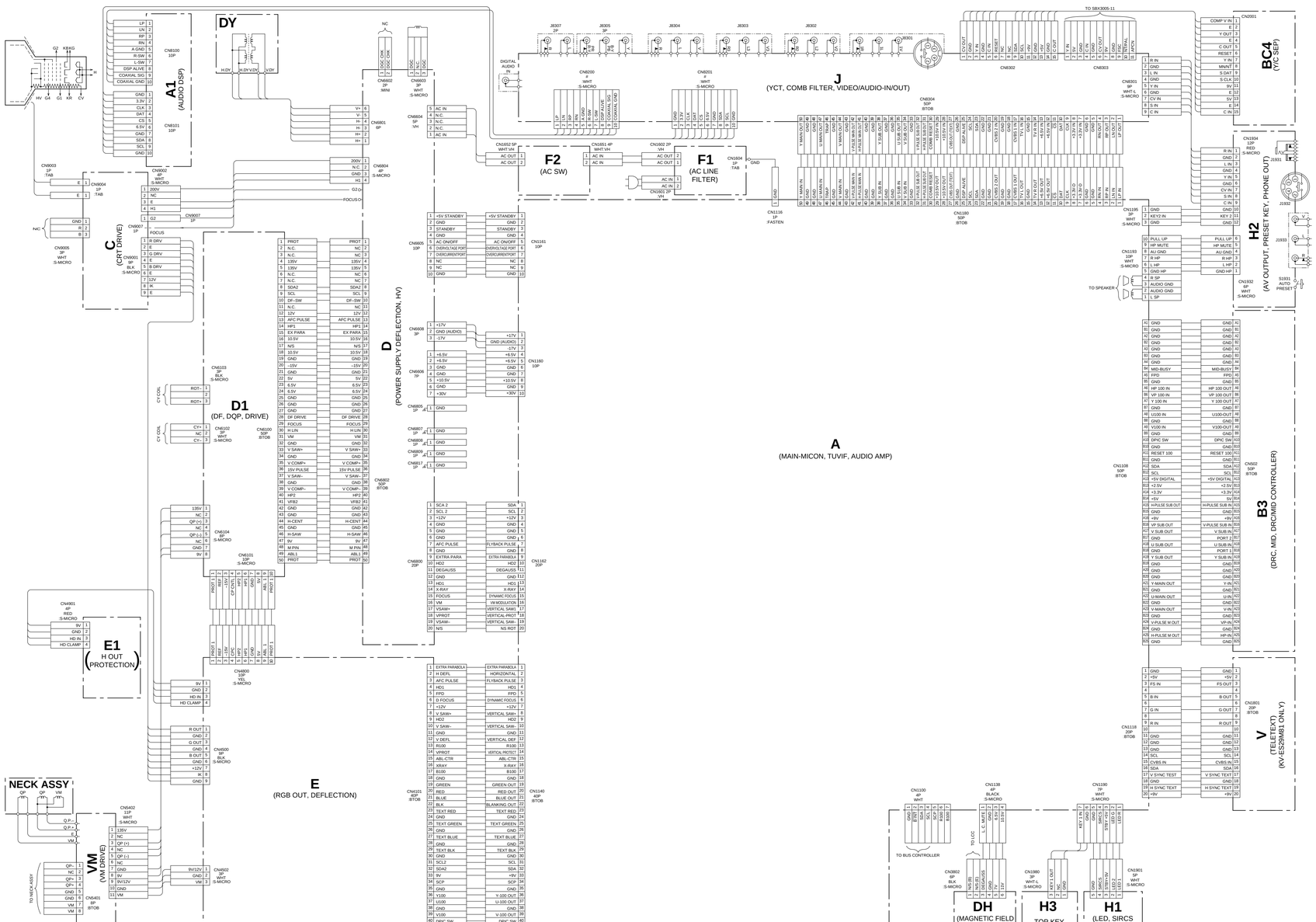



CN2001
COMP V IN 1
Y OUT 3
C OUT 5
RESET 6
S DAT 9
S CLK 10
9V 11
5V 13
C IN 15
J BOARD TO IC8313
CV
Y
C
LPF Q2018, 2019, FL2004
BUFF Q2014
BUFF Q2011, 2013, 2015
BPF Q2012, 2016, FL2003
LPF Q2004, 2005, 2008 Q2010, FL2002
BPF Q2003, 2006, 2007 Q2009, FL2001
BUFF Q2002
IC2005 +3.3V REG
+5V
+3.3V
9V
IC2004 3D COMB FILTER
88 AYI
76 CSI
96 ACI
84 AYO
83 ACO
57 RSTB
59 SCL
60 SDA
47 FSC0
50 FSC1
IC2003 MEMORY
MIO0 13
MIO15 28
IO1
IO16
MA0 1
MA8 9
AO
A8
MWE 11
MRAS 98
MOE 12
MZAS 10
XI 30
XO 31
X2001 20MHz
WE 13
RAS 14
OE 27
U CAS 28
L CAS 29

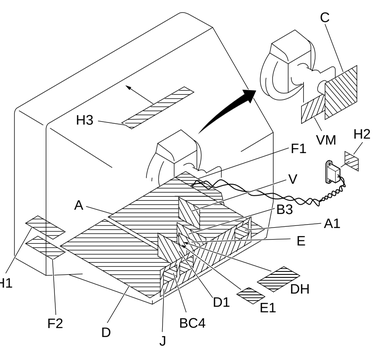
BC4 (Y/C SEP)


TO NECK ASSY
CN5401
1 QP-
2 QP-
3 QP+
4 QP+
7 VM
8 VM
VM (VM DRIVE)
Q5406
Q5407
VMOUT
Q5402
Q5403
Q5404
Q5405
BUFFER
Q5400, 5401
VM AMP
CN5402
3 QP(+)
4 QP(-1)
9 VM
TO D1 BOARD
CN6104
TO E BOARD
CN4502

6-2. FRAME SCHEMETIC DIAGRAMS



6-3. CIRCUIT BOARDS LOCATION



6-4. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note:

- All capacitors are in µF unless otherwise noted.
- All electrolytic capacitors are rated at 50V unless otherwise noted.
- All resistors are in ohms.
  kΩ = 1000Ω, MΩ = 1000kΩ
- Indication of resistance which does not have rating electrical power is as follows.

  Pitch: 5 mm
  Rating electrical power 1/4W (CHIP: 1/10W)

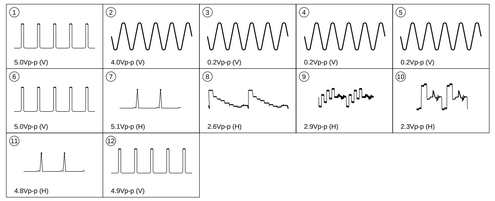
- ⚠ : nonflammable resistor.
- △ : internal component.
- ▭ : panel designation or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B unless otherwise noted.
- **Readings are taken with a color-bar signal input.**
  no mark : PAL
  ( ) : SECAM
  [ ] : NTSC 3.58
  « » : NTSC 4.43
- **Readings are taken with a 10 MΩ digital multimeter.**
- **Voltage are dc with respect to ground unless otherwise noted.**
- **Voltage variations may be noted due to normal production tolerances.**
- **All voltages are in V.**
- ✳ **: Cannot be measured.**
- **Circled numbers are waveform references.**
- **▪ ▪ ▪ ▪ : B + bus.**
- **▬▬ : B – bus.**
- ⇨ **: signal path.**

Reference information

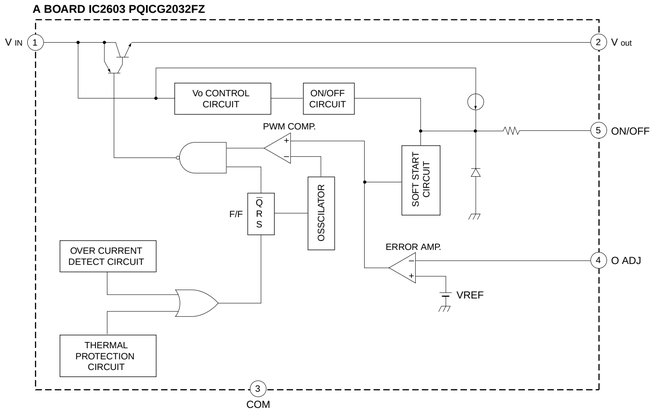
RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: ✳	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note: The component identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

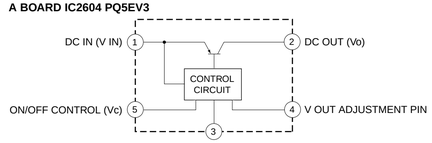
A BOARD WAVEFORMS



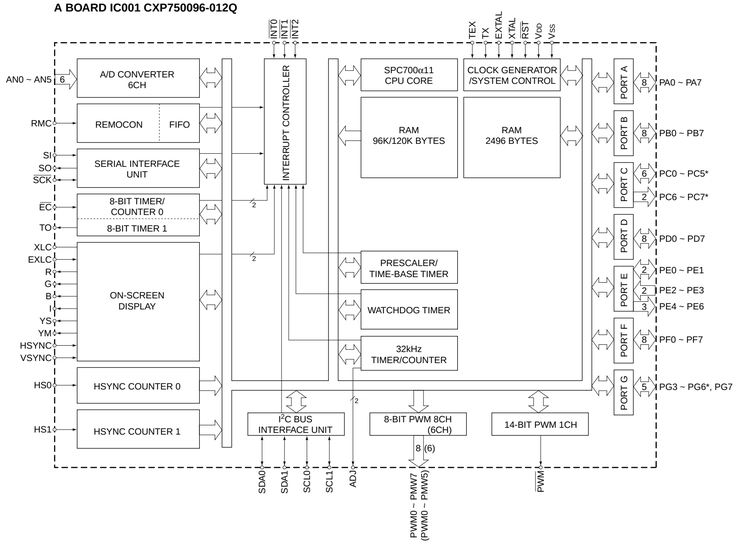
A BOARD IC2603 PQICG2032FZ



A BOARD IC2604 PQ5EV3



A BOARD IC001 CXP750096-012Q



A BOARD ✻ MARK LIST

	KV-ES29M80	KV-ES29M81	KV-ES29M90
JR109	O : CHIP	O : CHIP	#
CN1118	#	20P	#
CN1138	#	#	4P
TU101	FSS BTF-LG434	FSS BTF-LG434	FSS BTF-WG442

Note) The parts indicated as "#" in this circuit diagram are not listed here, as they are not used for these models.

A BOARD A

IC		TRANSISTOR	
IC001	B-9	Q1201	D-12
IC002	C-8	Q1206	D-13
IC003	A-8	Q1209	D-13
IC1201	E-13	Q1210	D-13
IC1203	F-13	Q1205	E-13
IC1204	B-13	DIODE	
IC1205	F-12		
IC2200	E-12	D1208	E-13
IC2600	E-8	D1209	D-11
IC2601	G-10		
IC2603	F-9		
IC2604	F-8		

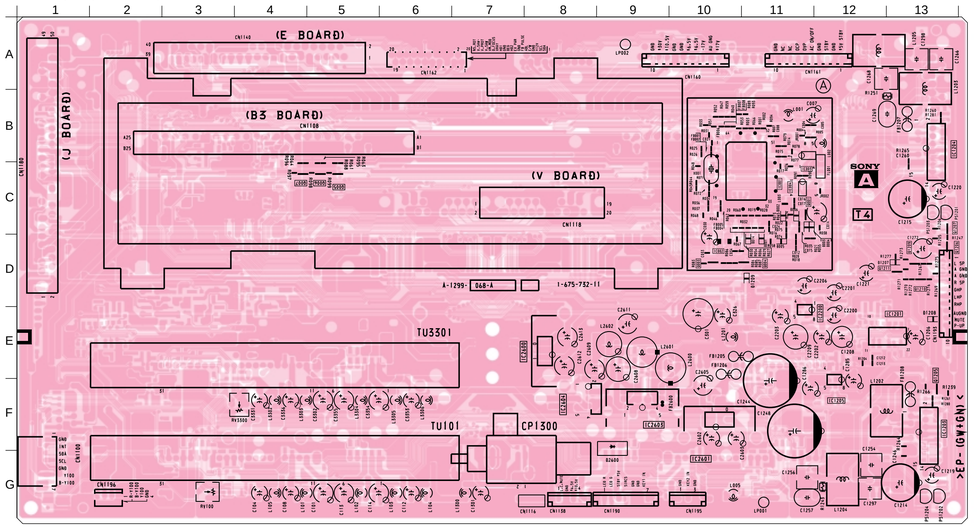
A BOARD B

IC		DIODE	
IC100	G-10	D300	A-9
IC901	I-13	D301	B-9
IC1203	G-1	D302	B-6
IC1204	B-1	D1205	F-1
IC2600	E-7	D2200	E-3
IC2601	F-4	D2201	D-3
IC2603	F-5		
IC2604	F-6		
TRANSISTOR			
Q101	G-11		
Q301	D-4		
Q313	D-4		
Q902	I-13		
Q2200	D-3		
Q2201	E-4		
Q3300	F-11		

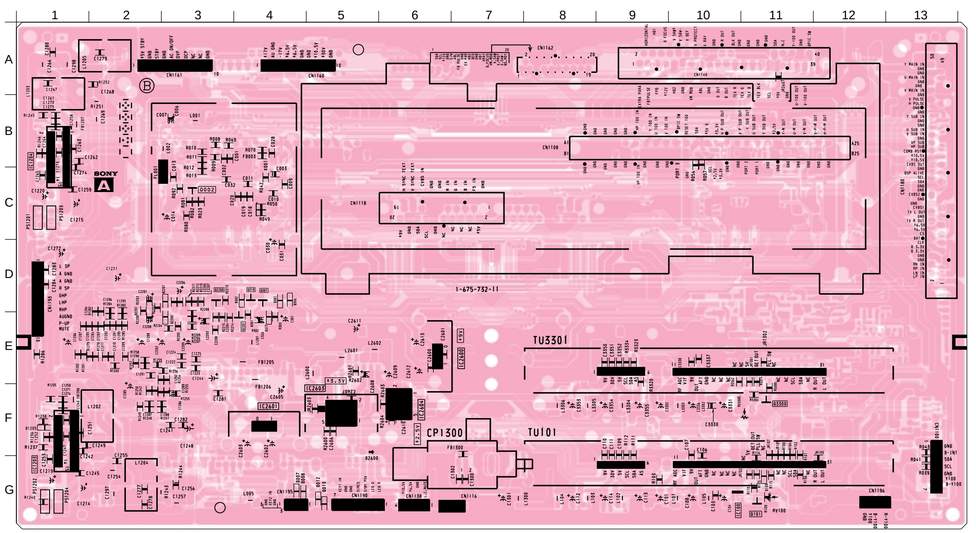
PRINTED WIRING BOARDS

A [MAIN-MICON, TUVIF, AUDIO AMP]

– A Board (Component Side) –



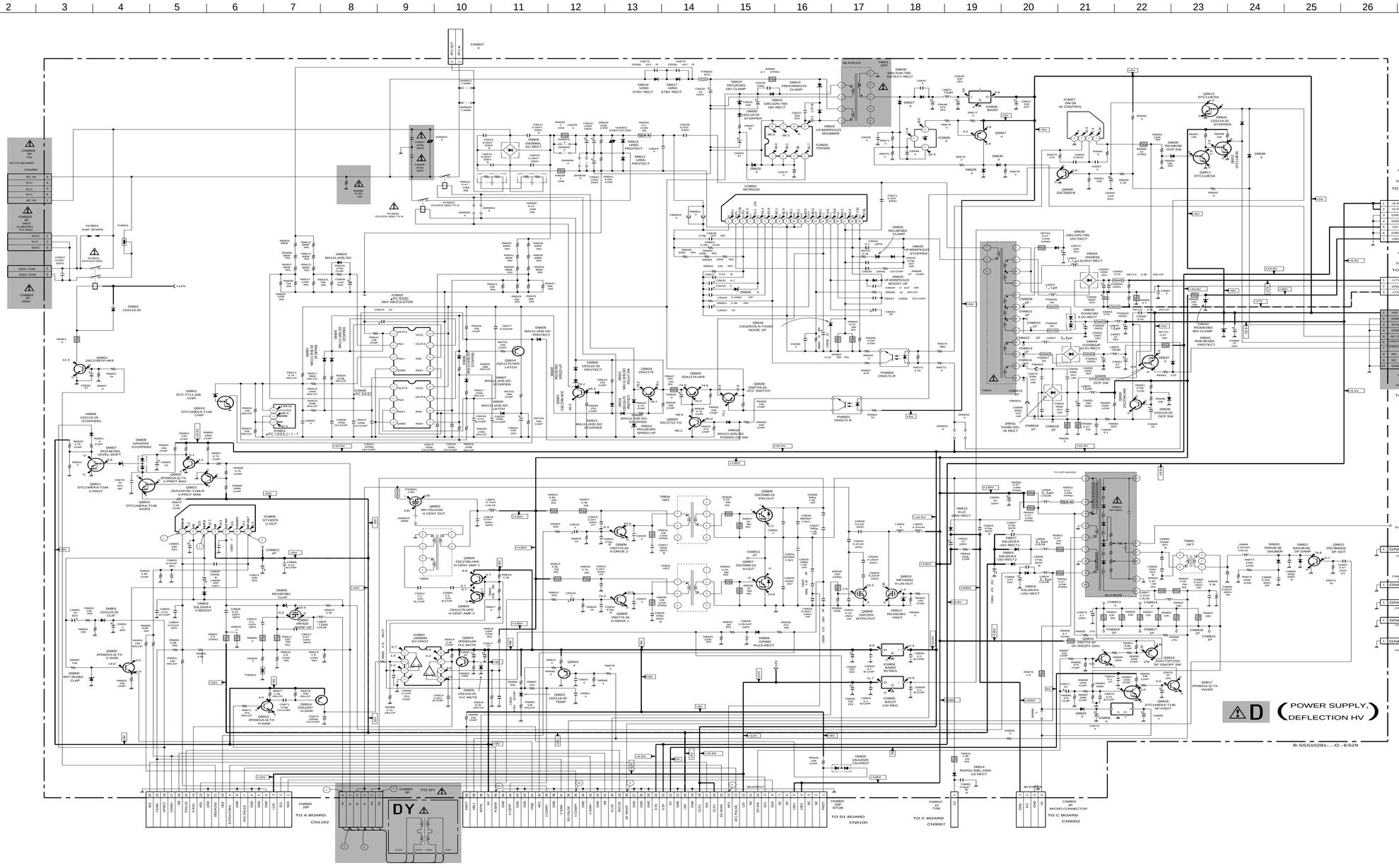
– A Board (Conductor Side) –



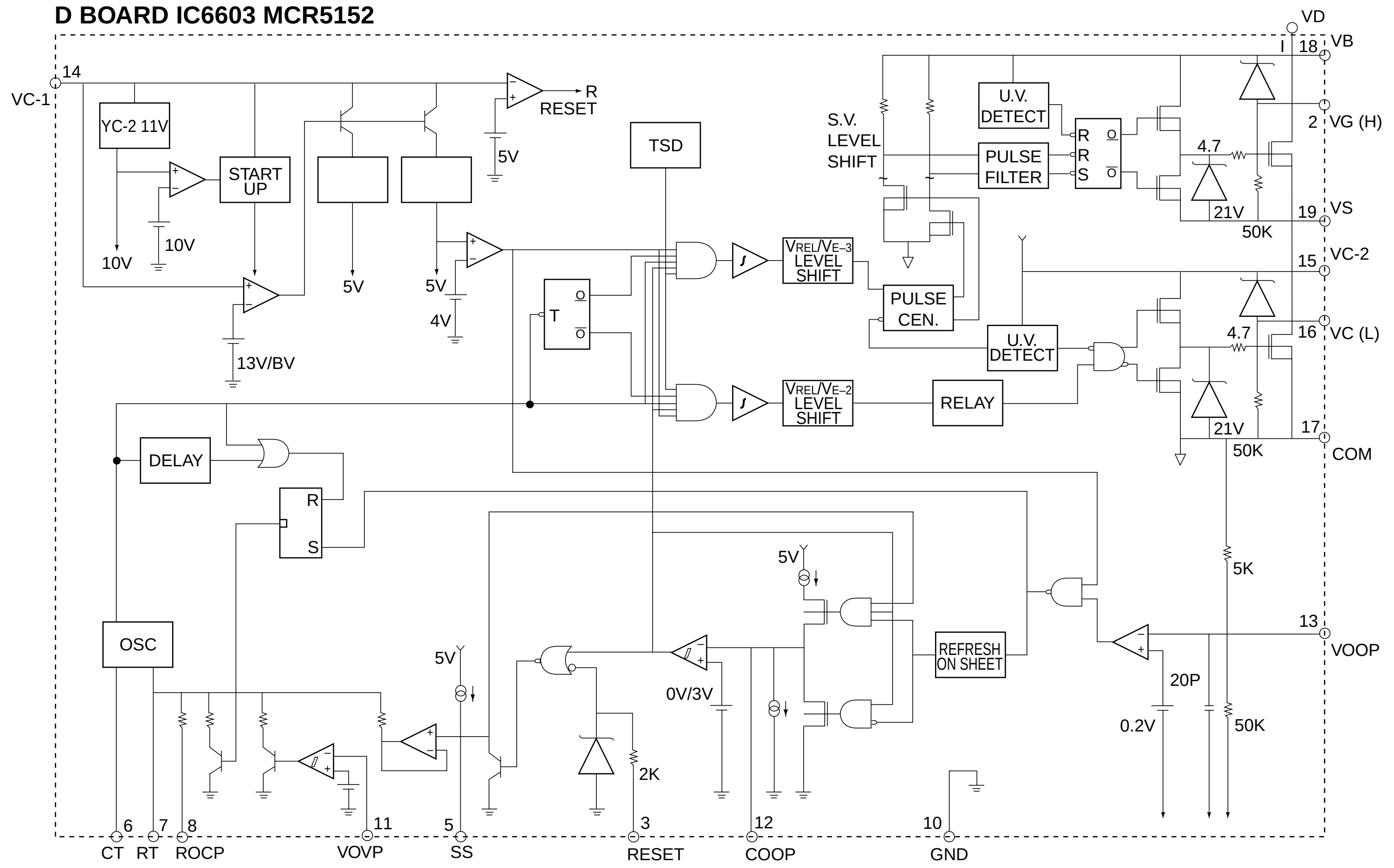
(1) Schematic Diagram of A Board

TO SPEAKER
TO MAGNETIC COIL
TO H2 BOARD CN1934
TO H1(CN1901)/ TO H3(CN1980)
TO H2 BOARD CN1932
TO D BOARD CN6605
TO D BOARD CN6606
TO D BOARD CN6800
TO E BOARD CN4101
TO V BOARD CN1801
TO B3 BOARD CN1108
TO F1 BOARD CN1604
TO BUS CONTROLLER
TO J BOARD CN8304
IC2600 BA09T +9V REG
IC2601 BA05T +5V REG
IC2603 PQ1CG2032FZ +3.3V REG
IC2604 PQ5EV3 +2.5V REG
IC1205 μPC4558G2 DIFFERENTIAL AMP
IC1201 TDA7315D013TR TONE CTRL
IC2200 NJM4560M SUB-HP-AMP
IC1203 TDA7481 R-AMP
IC1204 TDA7481 L-AMP
IC001 CXP750096-012Q MAIN CONTROLLER
IC002 S-80743AL-A7-S RESET
IC003 M24C08-MN6T EEPROM(A0-A7)
IC004 M24C04-MN6T EEPROM(A8-AB)
IC100 S-80743AL-A7-S MSP-RESET
TU3301 FSS BTF-LG436
TU101
CP1300 SpLITTER RF
Q3300 2SA1037 AMPLIFIER
Q101 2SA1037AK BUFFER
Q005 2SA1037AK Y 100 BUFFER
Q006 2SA1037AK B-Y100 BUFFER
Q007 2SA1037AK R-Y100 BUFFER
A (MAIN MICON,TUVIF, AUDIO AMP)
B-SSS10281-...-A..-ES29

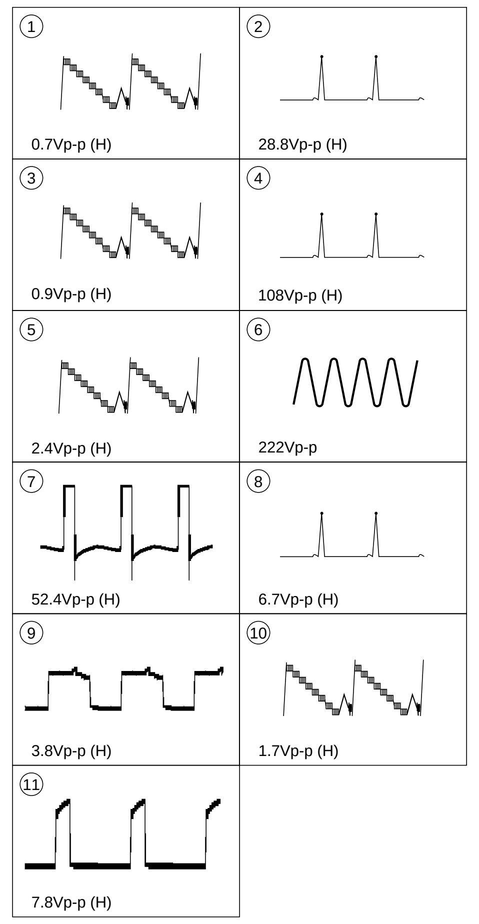
(2) Schematic Diagram of D Board



D BOARD IC6603 MCR5152



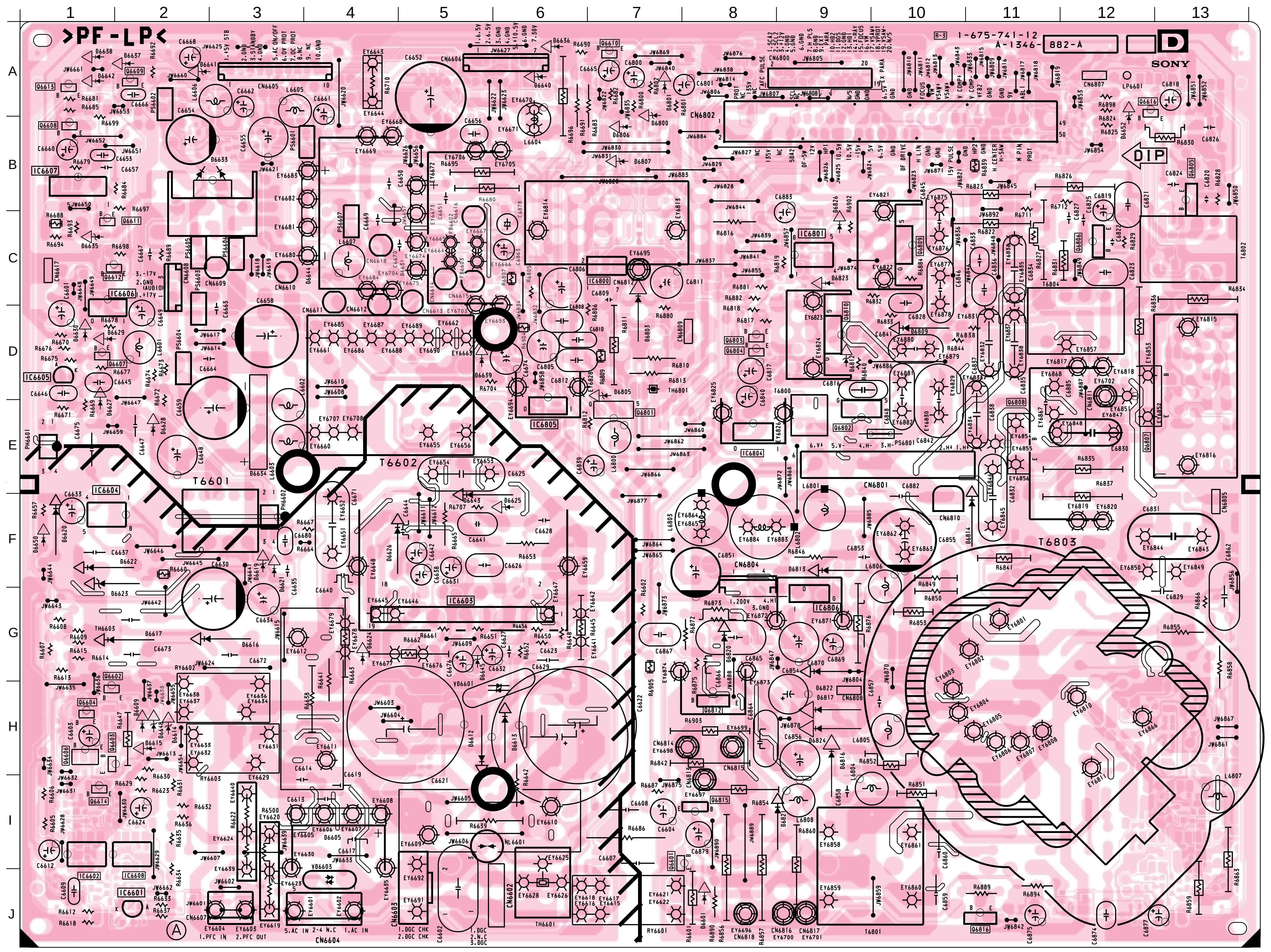
D BOARD WAVEFORMS



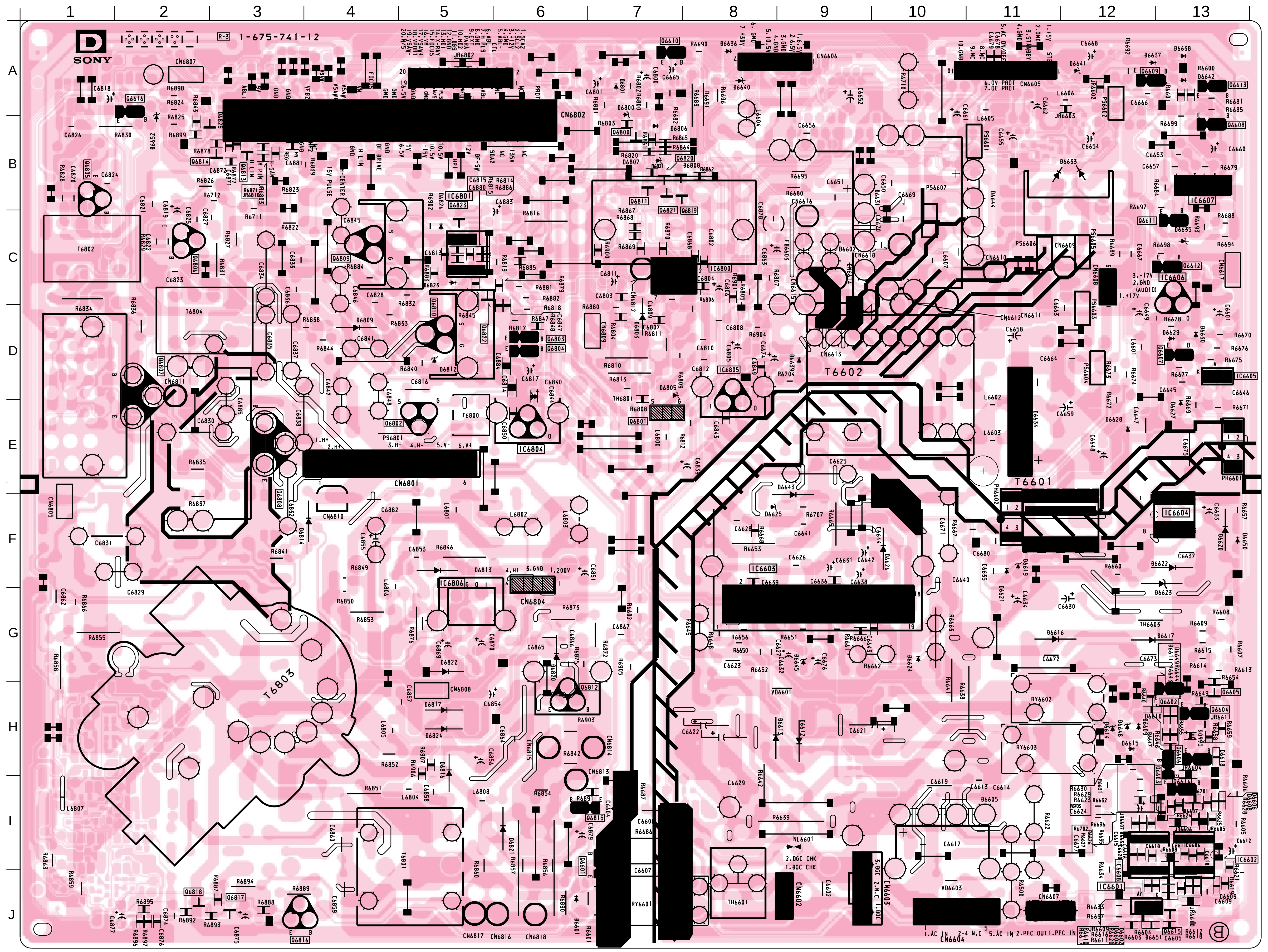
PRINTED WIRING BOARDS

D [POWER SUPPLY, DEFLECTION HV]

– D Board (Component Side) –



– D Board (Conductor Side) –



D BOARD (Component Side)

IC	
IC6601	J-2
IC6602	J-2
IC6603	G-5
IC6604	E-1
IC6605	D-1
IC6606	C-1
IC6607	B-1
IC6800	C-7
IC6801	C-9
IC6804	E-8
IC6805	E-6
IC6806	G-9

TRANSISTOR	
Q6601	1-8
Q6602	G-2
Q6603	H-2
Q6604	H-1
Q6606	H-1
Q6607	D-2
Q6608	B-1
Q6609	A-2
Q6610	A-7
Q6611	C-2
Q6612	C-1
Q6613	A-1
Q6801	E-7
Q6802	E-9
Q6803	D-8
Q6804	D-8

DIODE	
D6601	J-8
D6605	I-4
D6609	H-2
D6612	H-5
D6613	H-6
D6614	H-2
D6615	H-2
D6616	G-3
D6617	G-2
D6619	F-3
D6620	F-1
D6621	F-3
D6622	F-2
D6623	G-2
D6624	G-4
D6625	F-6
D6626	F-4
D6627	E-1
D6628	E-2
D6629	D-2
D6630	D-1
D6631	C-5
D6633	B-3
D6634	E-3
D6635	C-1
D6636	A-6
D6637	A-2
D6638	A-1
D6639	D-5
D6640	A-6
D6641	A-3

D6642	A-1
D6643	F-5
D6644	C-4
D6645	G-5
D6648	H-2
D6650	F-1
D6800	B-7
D6801	A-7
D6803	D-7
D6805	E-7
D6806	B-7
D6807	B-7
D6809	D-10
D6812	D-9
D6813	F-9
D6814	F-11
D6816	I-9
D6817	H-9
D6820	H-8
D6821	I-9
D6822	G-9
D6823	C-9
D6824	H-10
D6826	C-9
Q6805	B-12
Q6806	C-12
Q6807	B-12
Q6808	E-11
Q6809	C-10
Q6810	D-10
Q6812	H-8
Q6814	I-1
Q6815	I-8
Q6816	I-11

D BOARD (Conductor Side)

IC	
IC6601	J-12
IC6602	I-13
IC6603	F-8
IC6604	F-13
IC6605	D-13
IC6606	C-13
IC6607	B-13
IC6800	C-8
IC6801	B-5
IC6804	E-6
IC6805	D-8
IC6806	F-5

TRANSISTOR	
Q6601	J-6
Q6602	G-12
Q6603	H-13
Q6604	H-13
Q6605	H-13
Q6606	H-13
Q6607	D-13
Q6608	B-13
Q6611	C-12
Q6612	C-13
Q6614	I-13
Q6800	B-7
Q6801	D-7
Q6802	E-4
Q6803	D-6
Q6804	D-6
Q6806	C-2

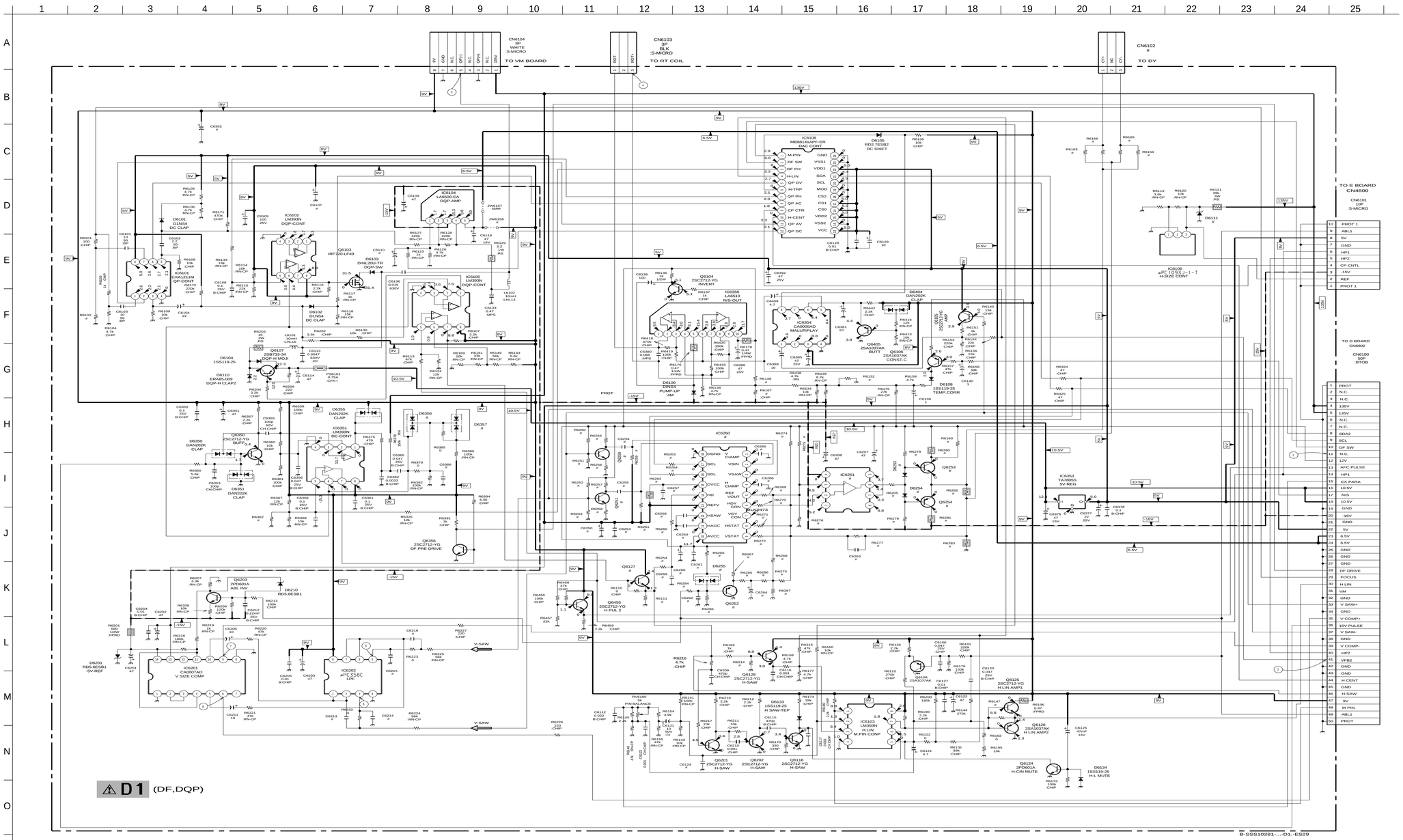
Q6807	D-2
Q6808	E-3
Q6809	C-4
Q6810	D-5
Q6811	C-7
Q6812	H-6
Q6815	I-7
Q6816	J-3
Q6817	J-3
Q6818	J-3
Q6819	C-8
Q6820	B-7
Q6821	C-7
Q6822	D-5
Q6825	C-5

DIODE	
D6601	J-6
D6602	J-13
D6603	J-13
D6604	J-12
D6605	I-11
D6606	I-13
D6607	I-12
D6608	I-13
D6609	H-12
D6610	G-13
D6611	G-13
D6612	H-9
D6613	H-9
D6614	H-12
D6615	H-12
D6616	G-11

D6617	G-12
D6619	F-11
D6620	F-13
D6621	G-11
D6622	F-13
D6624	G-10
D6625	F-9
D6626	F-10
D6627	E-13
D6628	E-12
D6629	D-13
D6630	D-13
D6631	B-10
D6632	I-13
D6634	E-11
D6635	C-13
D6636	A-8
D6637	A-13
D6638	A-13
D6639	D-9
D6640	A-8
D6641	A-12
D6642	A-13
D6643	E-9
D6644	C-11
D6645	H-9
D6648	H-12
D6649	G-13
D6650	F-13
D6800	B-7
D6801	A-7
D6803	D-7
D6805	E-7
D6806	B-7

D6807	B-7
D6808	B-8
D6809	D-4
D6812	D-5
D6813	F-5
D6814	F-4
D6816	I-5
D6817	H-5
D6820	H-6
D6821	I-6
D6822	G-5
D6824	H-5
D6825	B-3
D6826	C-5

(3) Schematic Diagram of D1 Board



10	PROT 1
9	ABL1
8	5V
7	GND
6	HP1
5	HP2
4	CP CNTL
3	-15V
2	REF
1	PROT 1

1	PROT
2	N.C.
3	N.C.
4	135V
5	135V
6	N.C.
7	N.C.
8	SDA2
9	SCL
10	DF SW
11	N.C.
12	12V
13	AFC PULSE
14	HP1
15	EX PARA
16	10.5V
17	N/S
18	10.5V
19	GND
20	-15V
21	GND
22	5V
23	6.5V
24	6.5V
25	GND
26	GND
27	GND
28	DF DRIVE
29	FOCUS
30	H LIN
31	VM
32	GND
33	V SAW+
34	GND
35	V COMP+
36	15V PULSE
37	V SAW-
38	GND
39	V COMP-
40	HP2
41	VFB2
42	GND
43	GND
44	H CENT
45	GND
46	H SAW
47	9V
48	M PIN
49	ABL1
50	PROT

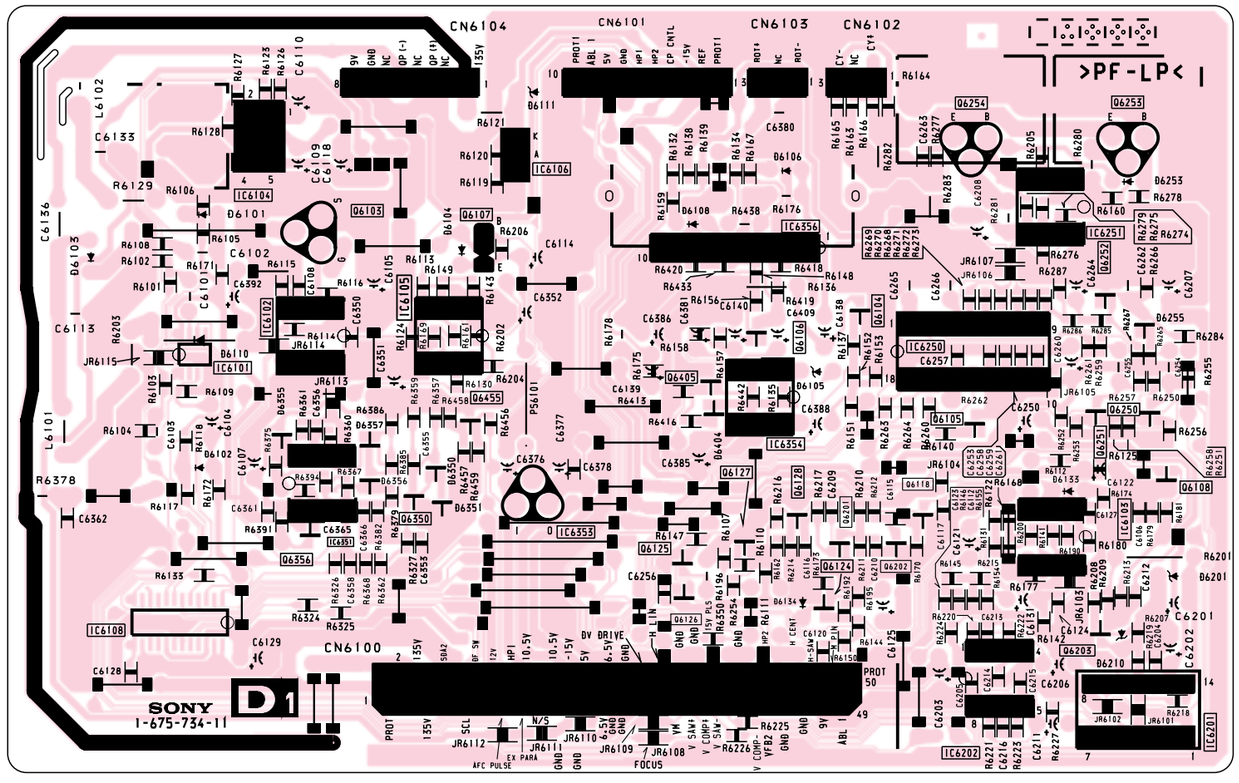
Schematic diagram
D1 board ➡

KV-ES29M80/ES29M81/ES29M90
RM-916

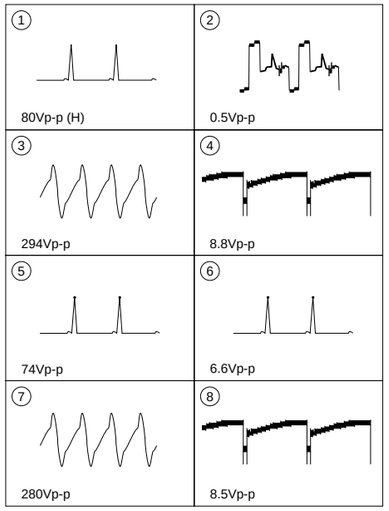
PRINTED WIRING BOARD

D1 [DF, DQP DRIVE]

– D1 Board –



D1 BOARD WAVEFORMS

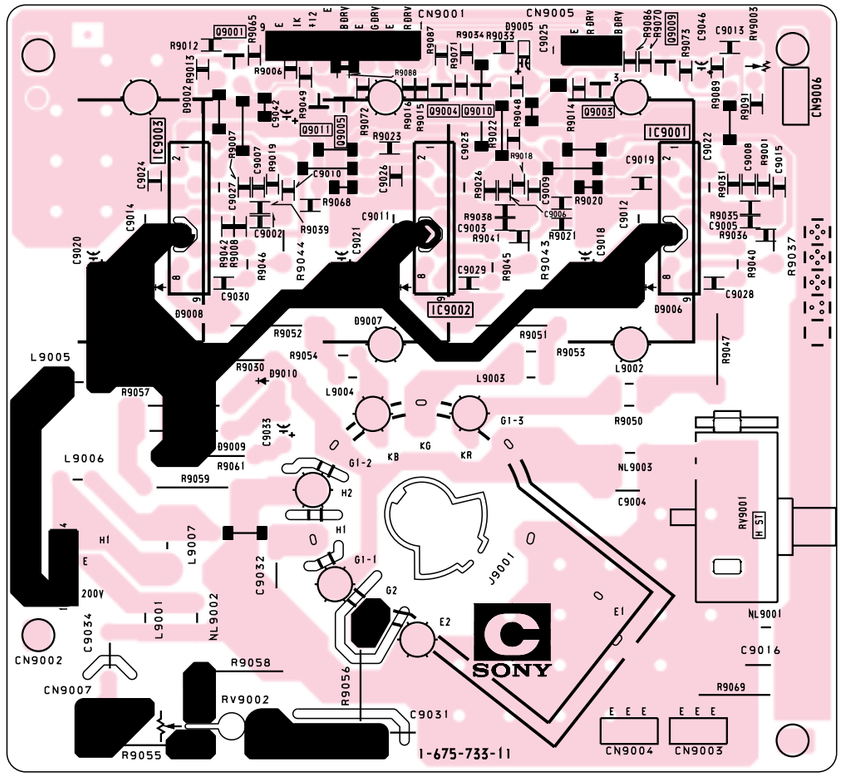


KV-ES29M80/ES29M81/ES29M90
RM-916

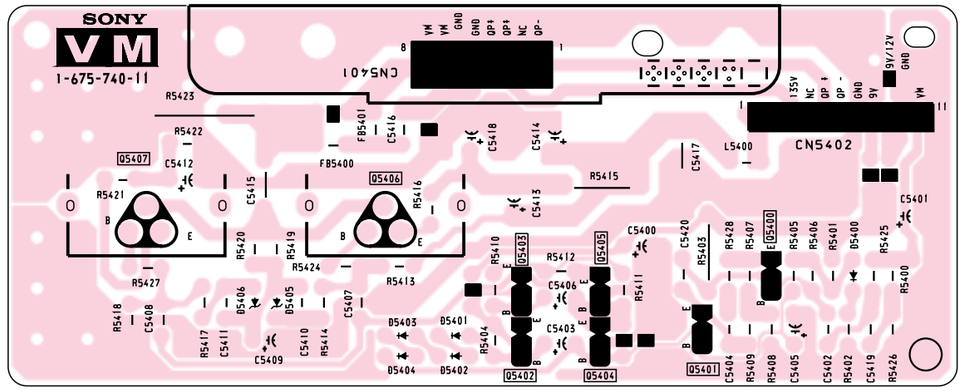
PRINTED WIRING BOARDS

C [CRT DRIVE] **VM** [VM DRIVE] **F1** [AC LINE FILTER]

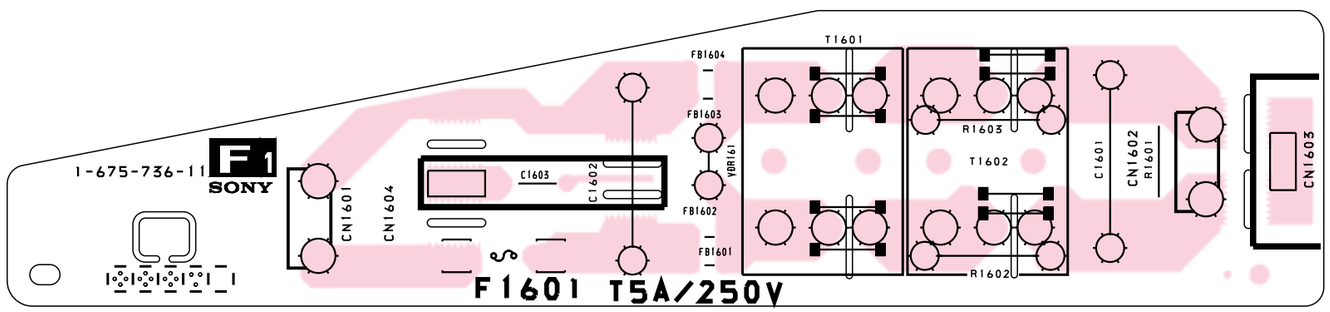
– C Board –



– VM Board –



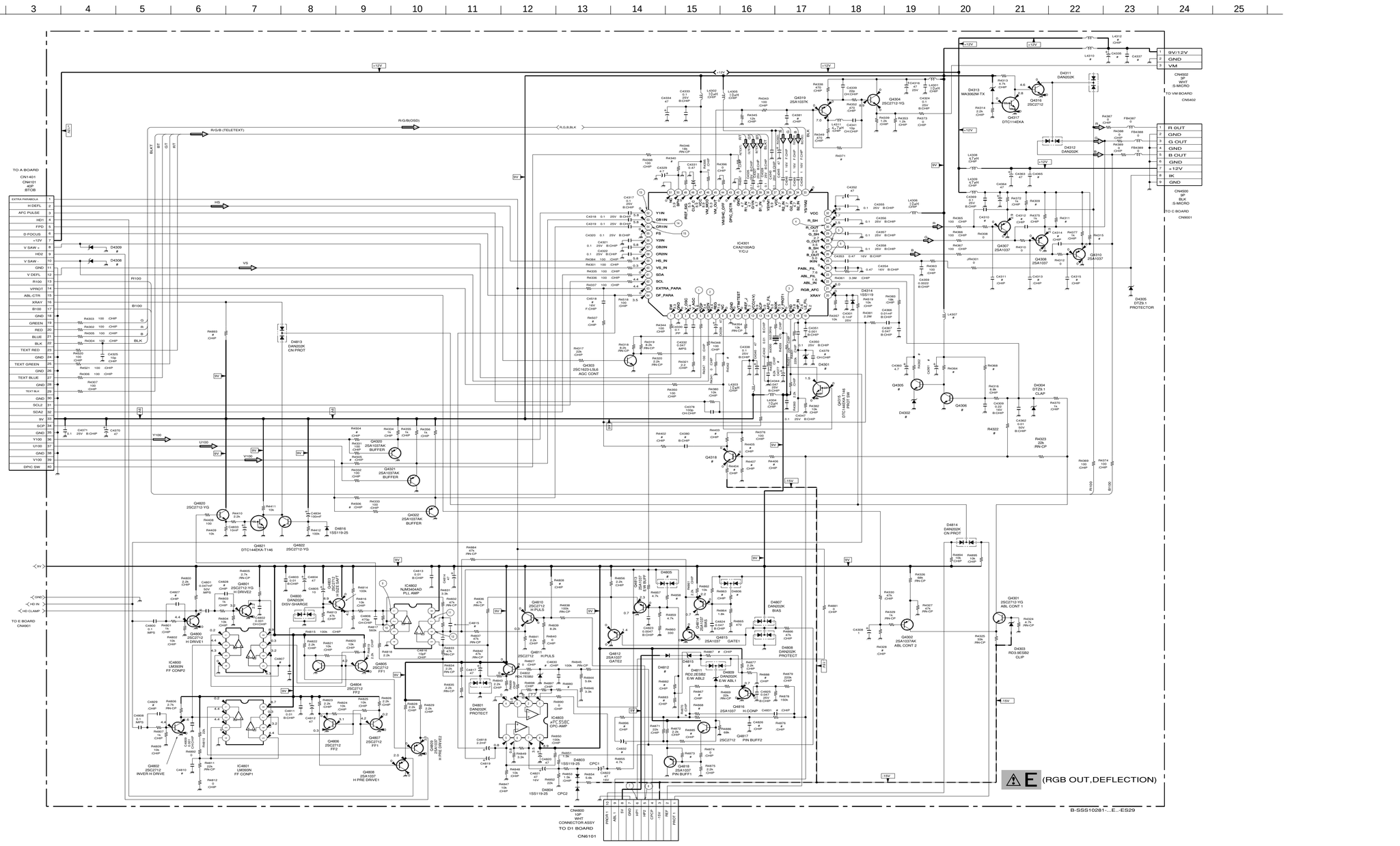
– F1 Board –



(4) Schematic Diagram of C, F1, VM Boards

C (CRT DRIVE)
B-SSSAG3-...-C..-ES29
IC9001 TDA6111Q/N4 RED-VIDEO-OUT
RED.OUT
IC9002 TDA6111Q/N4 GREEN-VIDEO-OUT
GREEN.OUT
IC9003 TDA6111Q/N4 BLUE-VIDEO-OUT
BLUE.OUT
Q9009 2SA1037AK-T146-R R DRIVE
Q9010 2SA1037AK-T146-R G DRIVE
Q9011 2SA1037AK-T146-R B DRIVE
Q9001 2SA1037AK-T146-R BUFFER
D9002 MA3091 PROTECT
D9005 MA111-(K8).SO
D9006 HSS83TD PROTECT
D9007 HSS83TD PROTECT
D9008 HSS83TD PROTECT
D9009 GP08D PROTECTOR
D9010 RD10ESB2 BUFFER
CN9001 9P BLK :S-MICRO
TO E BOARD CN4500
CN9005 3P WHT :S-MICRO
CN9004 1P :TAB
TO COATING EARTH
CN9002 3P WHT MICRO CONNECTOR
TO D BOARD CN6804
CN9003 1P :TAB
TO COATING EARTH
CN9006 # :TAB
CN9007 1P
PICTURE TUBE
M68LNH070X
F1 (AC LINE FILTER)
TO AC CORD CN1601 2P :VH
AC IN
AC OUT
CN1602 2P :VH
TO F2 BOARD CN1651
TO A BOARD CN1116
CN1604 1P :TAB
GND
CN1603 1P :TAB
F1601 T5A 250V
C1602 0.68 250V
C1603 4700p 250V
C1601 0.47 250V
VDR161 (ERZV14D621)
T1601 10MH
T1602 10MH
R1601 1M
B-SSSAG3-...-F1.-ES29
C BOARD WAVEFORMS
1 PAL 118Vp-p (H)
1 SECAM/NTSC 118Vp-p (H)
2 117Vp-p (H)
3 123Vp-p (H)
4 23.2Vp-p (H)
5 4.5Vp-p (H)
6 4.4Vp-p (H)
7 4.4Vp-p (H)
VM (VM DRIVE)
Q5400 2SC3311A-QRSTA VM AMP
Q5401 2SC3311A-QRSTA VM AMP
Q5402 2SC3311A-QRSTA BUFFER
Q5403 2SC3311A-QRSTA BUFFER
Q5404 2SA1309A-QRSTA BUFFER
Q5405 2SA1309A-QRSTA
Q5406 2SA2005 VM-OUT
Q5407 2SC5511 VM-OUT
D5400 1SS133T TEMP-CORR
D5401 D1NS4-TR VOLTAGE DROP
D5402 1SS133T VOLTAGE DROP
D5403 1SS133T VOLTAGE DROP
D5404 1SS133T VOLTAGE DROP
D5405 MTZJ-T-77-22 LEV.SHIFT
D5406 MTZJ-T-77-22 LEV.SHIFT
CN5402 11P WHT :S-MICRO
(Pin 1-7) TO D1 BOARD CN6104
(Pin 8-11) TO E BOARD CN4502
CN5401 8P :BTOB
TO NECK ASSY
B-SSSAG3-...-VM.-ES29

(5) Schematic Diagram of E Board

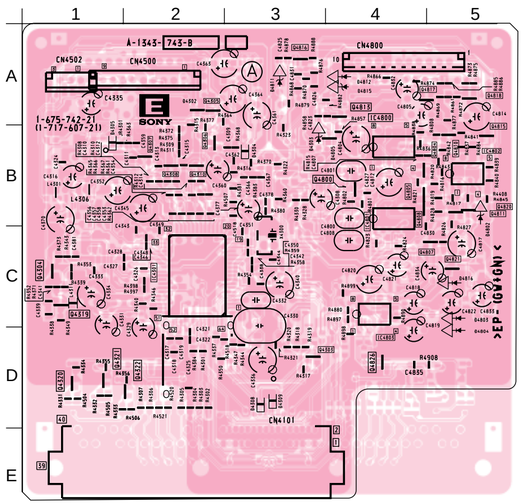


KV-ES29M80/ES29M81/ES29M90
RM-916
KV-ES29M80/ES29M81/ES29M90
RM-916

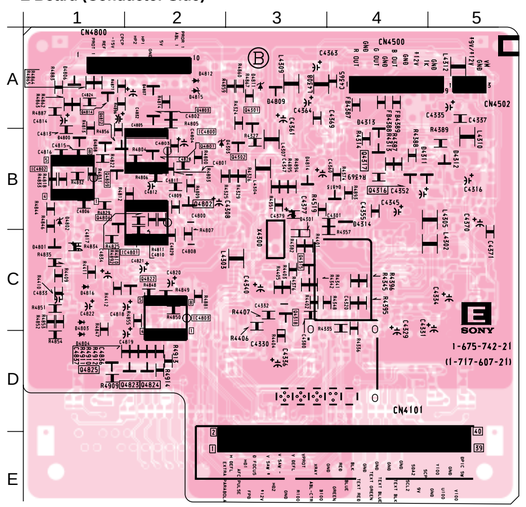
PRINTED WIRING BOARDS

E [RGB OUT, DEFLECTION]

– E Board (Component Side) –



– E Board (Conductor Side) –



• : Pattern from the side which enables seeing.
• : Pattern from the rear side.

E BOARD (Component Side)

IC		Q4320	D-1	DIODE	
		Q4321	D-1		
IC4301	C-2	Q4322	D-2	D4302	A-2
IC4800	A-4	Q4800	B-4	D4303	B-3
IC4801	C-4	Q4804	B-5	D4304	B-3
IC4802	B-5	Q4805	B-4	D4305	B-12
IC4803	D-4	Q4806	B-2	D4308	D-3
TRANSISTOR		Q4807	C-5	D4309	D-3
		Q4808	B-4	D4802	B-5
Q4303	D-4	Q4810	B-5	D4805	B-4
Q4304	C-1	Q4811	B-5	D4806	C-5
Q4305	A-2	Q4813	A-4	D4811	A-3
Q4307	B-2	Q4815	B-5	D4812	A-4
Q4308	B-2	Q4816	A-3	D4815	A-4
Q4310	B-2	Q4817	A-5		
Q4319	C-1	Q4818	A-5		

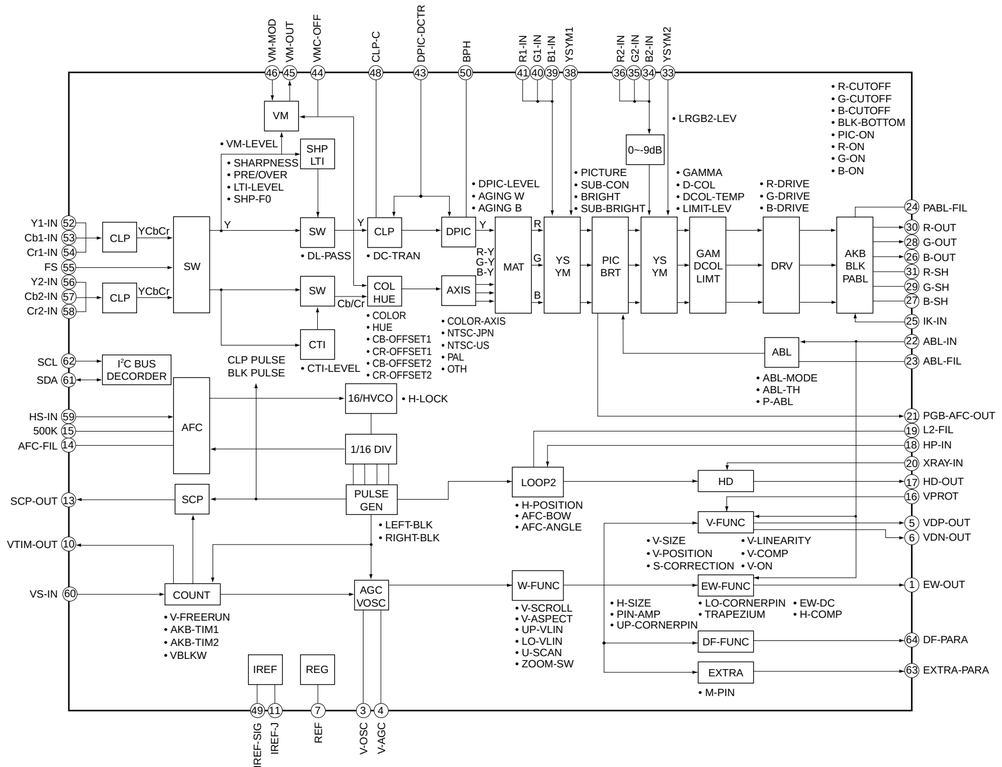
E BOARD (Conductor Side)

IC		Q4806	B-12	D4806	A-1
		Q4809	B-1	D4807	A-2
IC4800	B-2	Q4812	A-1	D4808	B-1
IC4801	C-2	Q4814	A-1	D4809	A-3
IC4802	B-1	DIODE		D4811	A-3
IC4803	C-2			D4812	A-2
TRANSISTOR		D4301	C-3	D4813	B-4
		D4303	B-3	D4814	B-3
Q4301	A-3	D4311	B-5	D4815	A-2
Q4302	B-3	D4312	B-5	D4819	C-3
Q4315	C-3	D4313	A-4		
Q4316	B-4	D4800	B-1		
Q4317	B-4	D4801	C-1		
Q4318	D-3	D4802	B-1		
Q4801	B-2	D4803	C-1		
Q4802	B-2	D4804	C-1		

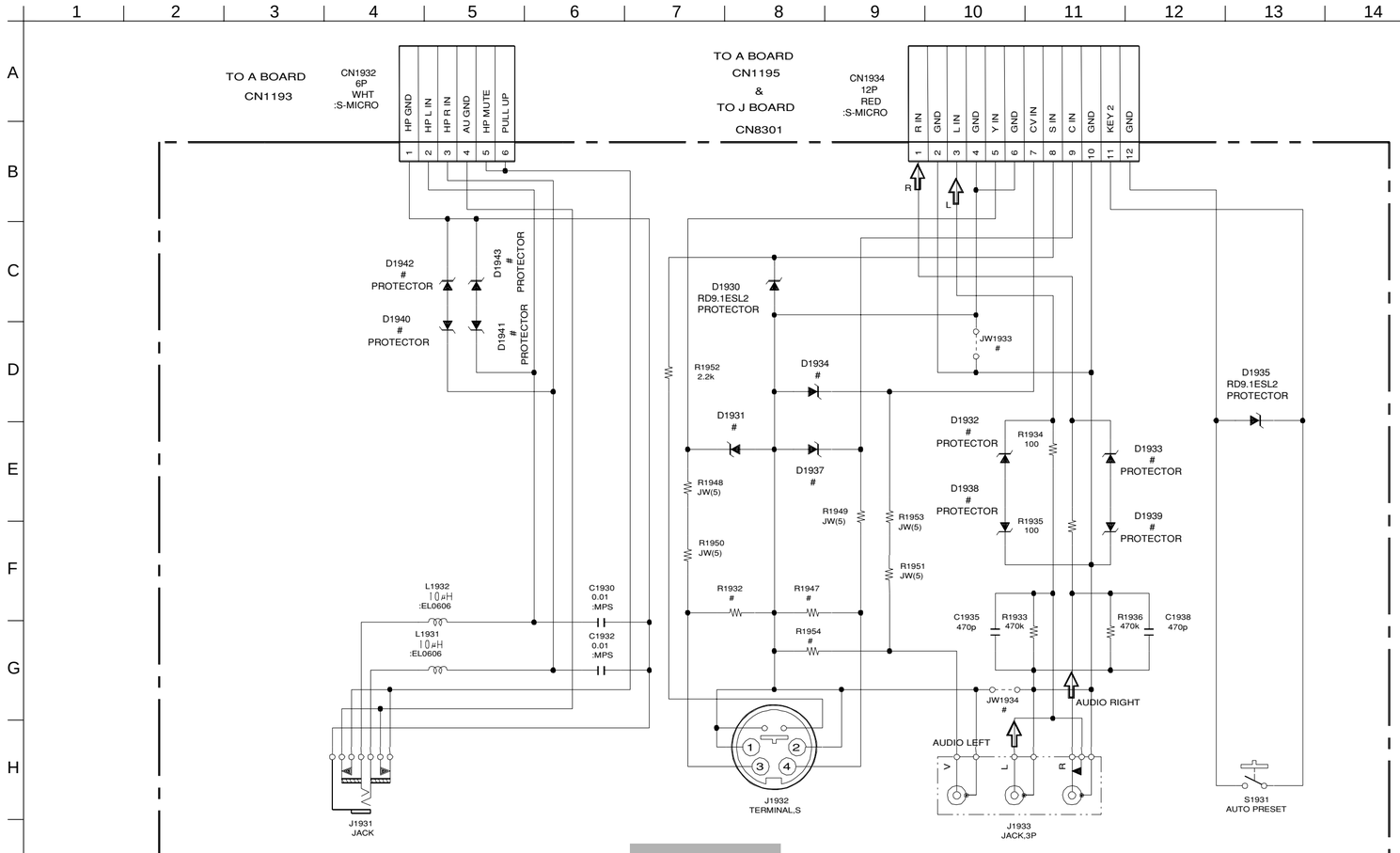
E BOARD WAVEFORMS

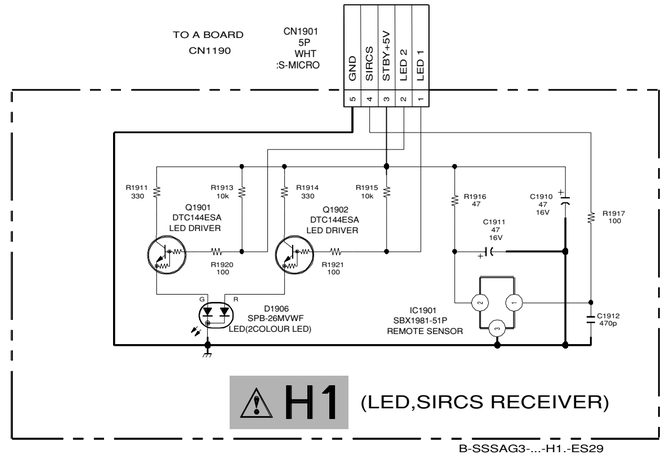
① 1.5Vp-p (V)	② 1.4Vp-p (V)	③ 5.0Vp-p (V)	④ 2.4Vp-p	⑤ 2.4Vp-p
⑥ 2.4Vp-p (H)	⑦ 7.3Vp-p (V)	⑧ 64.0Vp-p (V)	⑨ 1.7Vp-p (V)	⑩ 1.2Vp-p (V)
⑪ 2.7Vp-p (V)	⑫ 2.1Vp-p (V)	⑬ 0.1Vp-p (H)	⑭ 0.7Vp-p (H)	⑮ 0.6Vp-p (H)

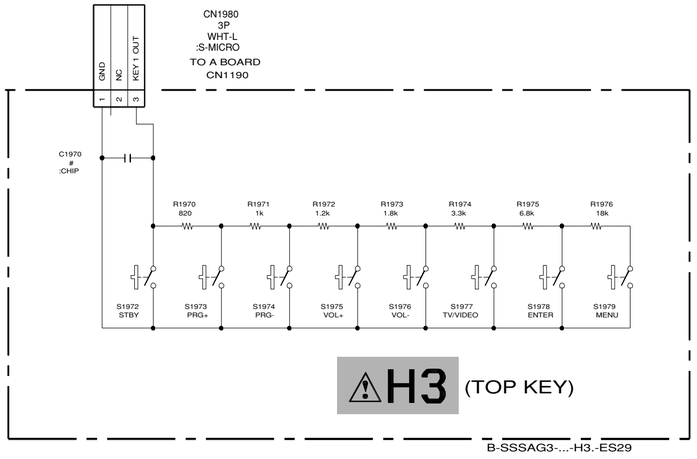
E Board IC4301 CXA2100AQ



Schematic diagrams
H1 H2 H3 boards ➡


TO A BOARD
CN1193
CN1932
6P
WHT
:S-MICRO
HP GND
HP L IN
HP R IN
AU GND
HP MUTE
PULL UP
TO A BOARD
CN1195
&
TO J BOARD
CN8301
CN1934
12P
RED
:S-MICRO
R IN
GND
L IN
GND
Y IN
GND
CV IN
S IN
C IN
GND
KEY 2
GND
D1942
#
PROTECTOR
D1940
#
PROTECTOR
D1943
#
PROTECTOR
D1941
#
PROTECTOR
D1930
RD9.1ESL2
PROTECTOR
JW1933
#
R1952
2.2k
D1934
#
D1931
#
D1937
#
D1935
RD9.1ESL2
PROTECTOR
D1932
#
PROTECTOR
D1938
#
PROTECTOR
D1933
#
PROTECTOR
D1939
#
PROTECTOR
R1934
100
R1935
100
R1948
JW(5)
R1949
JW(5)
R1953
JW(5)
R1950
JW(5)
R1951
JW(5)
R1932
#
R1947
#
R1954
#
L1932
10μH
:EL0606
L1931
10μH
:EL0606
C1930
0.01
:MPS
C1932
0.01
:MPS
C1935
470p
R1933
470k
R1936
470k
C1938
470p
JW1934
#
AUDIO RIGHT
AUDIO LEFT
J1931
JACK
J1932
TERMINAL,S
J1933
JACK,3P
S1931
AUTO PRESET
H2
(AV INPUT,PRESET KEY,PHONE OUT)
B-SSSAG3-...-H2.-ES29

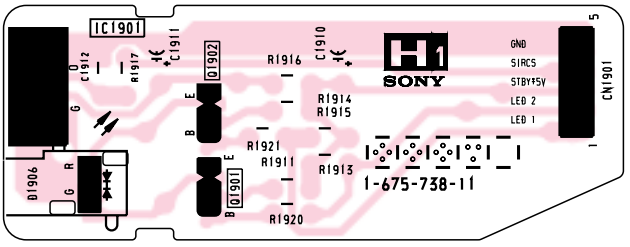

TO A BOARD
CN1190
CN1901
5P
WHT
:S-MICRO
GND
SIRCS
STBY+5V
LED 2
LED 1
R1911
330
R1913
10k
R1914
330
R1915
10k
R1916
47
C1910
47
16V
R1917
100
Q1901
DTC144ESA
LED DRIVER
Q1902
DTC144ESA
LED DRIVER
C1911
47
16V
R1920
100
R1921
100
D1906
SPB-26MVWF
LED(2COLOUR LED)
IC1901
SBX1981-51P
REMOTE SENSOR
C1912
470p
H1
(LED,SIRCS RECEIVER)
B-SSSAG3-...-H1.-ES29


CN1980
3P
WHT-L
:S-MICRO
TO A BOARD
CN1190
GND
NC
KEY1 OUT
C1970
#
:CHIP
R1970
820
R1971
1k
R1972
1.2k
R1973
1.8k
R1974
3.3k
R1975
6.8k
R1976
18k
S1972
STBY
S1973
PRG+
S1974
PRG-
S1975
VOL+
S1976
VOL-
S1977
TV/VIDEO
S1978
ENTER
S1979
MENU
H3
(TOP KEY)
B-SSSAG3-...-H3.-ES29

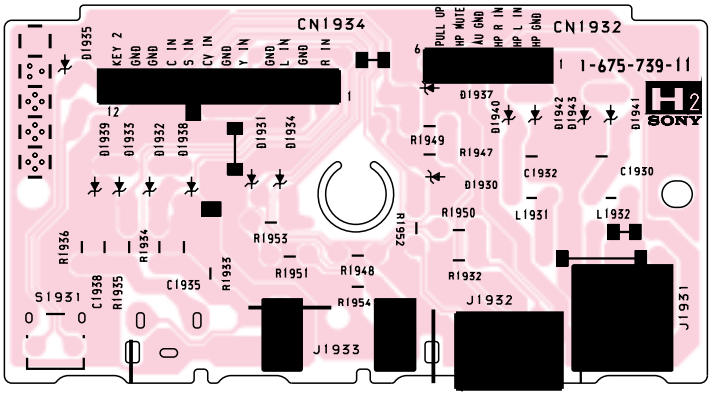
PRINTED WIRING BOARDS

H1 [LED, SIRCS RECEIVER] **H2** [AV INPUT, PRESET KEY, PHONE OUT] **H3** [TOP KEY]

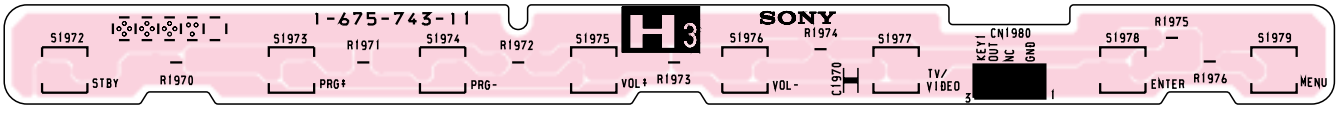
– H1 Board –



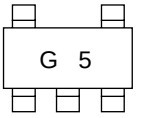
– H2 Board –



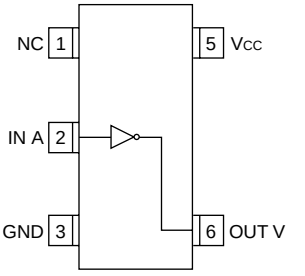
– H3 Board –



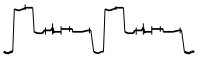
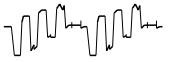
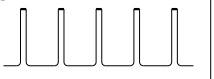
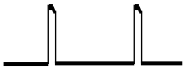
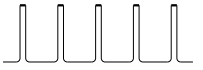
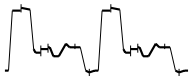
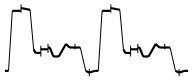
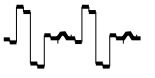
B3 BOARD IC309 TC7SET04F (TE85R)

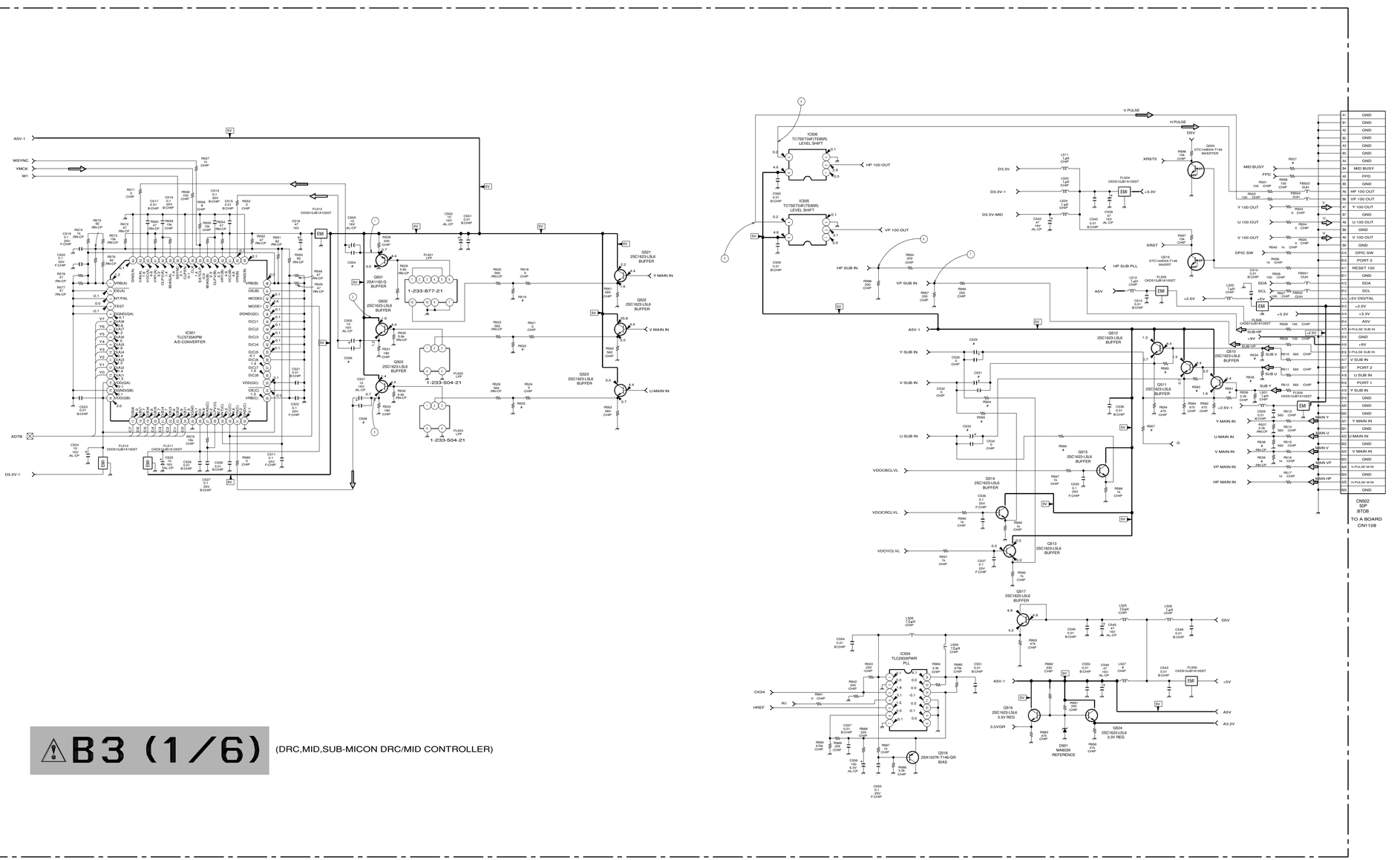


B3 BOARD IC505 TC7SET04F (TE85R)

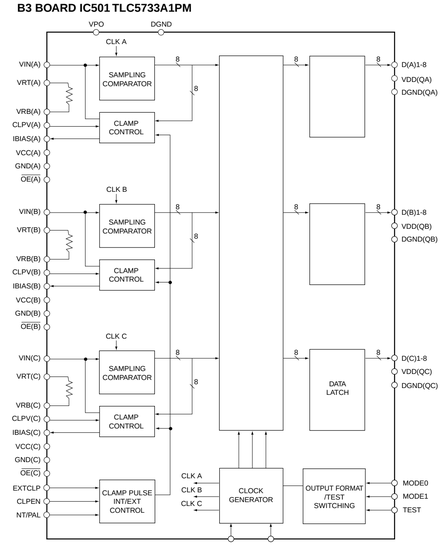


B3 BOARD WAVEFORMS

① 1.7Vp-p (H)	②  1.0Vp-p (H)	③  1.1Vp-p (H)	④ 4.7Vp-p (V)	⑤  4.9Vp-p (V)
⑥  2.3Vp-p (V)	⑦  2.2Vp-p (V)	⑧ 2.8Vp-p (V)	⑨ 3.1Vp-p (V)	⑩ 0.6Vp-p (H)
⑪  0.6Vp-p (H)	⑫ 1.0Vp-p (H)	⑬ 3.5Vp-p (V)	⑭ 0.9Vp-p (H)	⑮ 0.6Vp-p (H)
⑯  0.5Vp-p (H)	⑰ 3.7Vp-p (V)	⑱ 0.6Vp-p	⑲ 0.1Vp-p (H)	⑳  0.6Vp-p

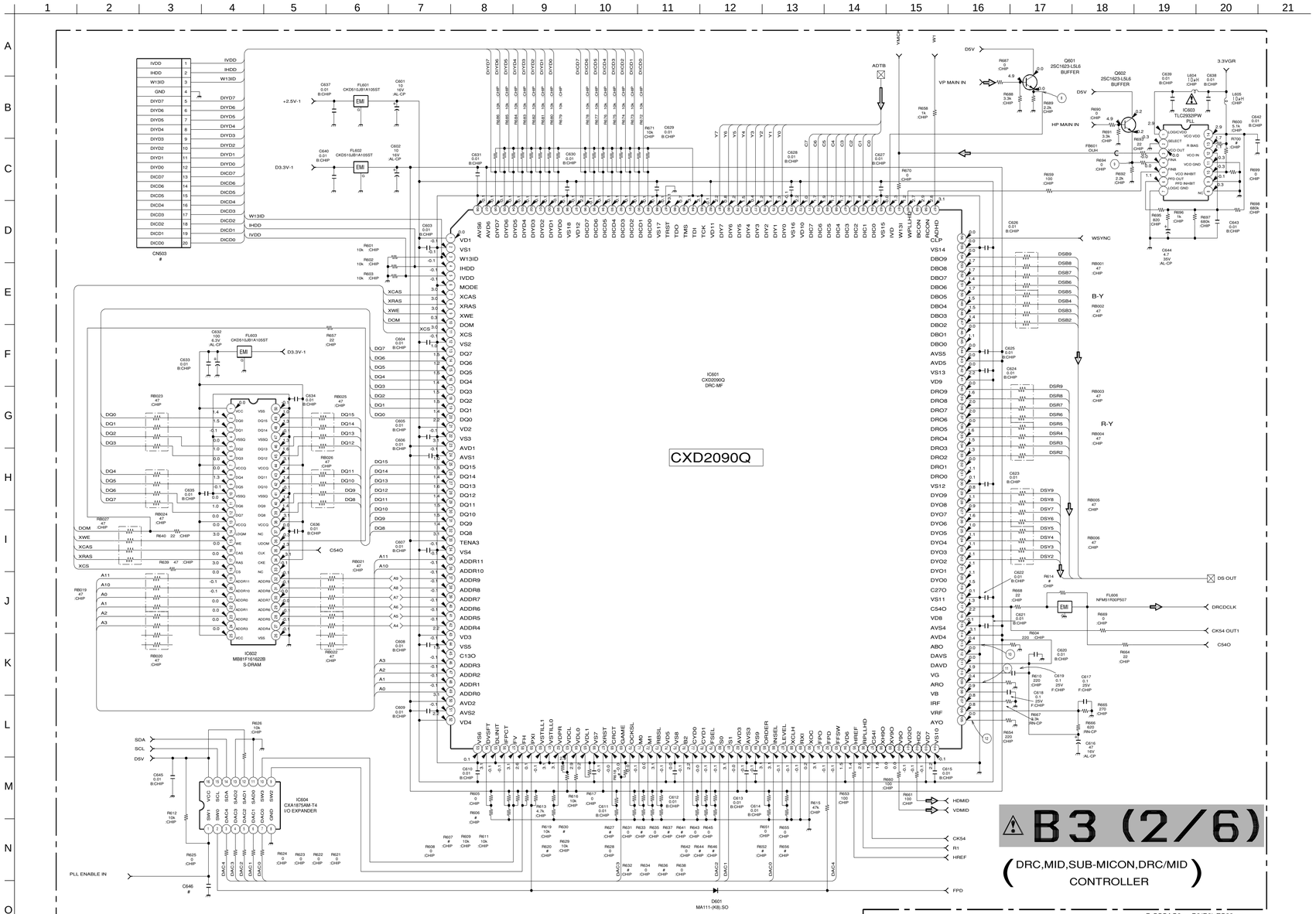


B3 BOARD IC501 TLC5733A1PM



B3 (1/6) (DRC,MID,SUB-MICON DRC/MID CONTROLLER)

(8) Schematic Diagram of B3 (2/6) Board



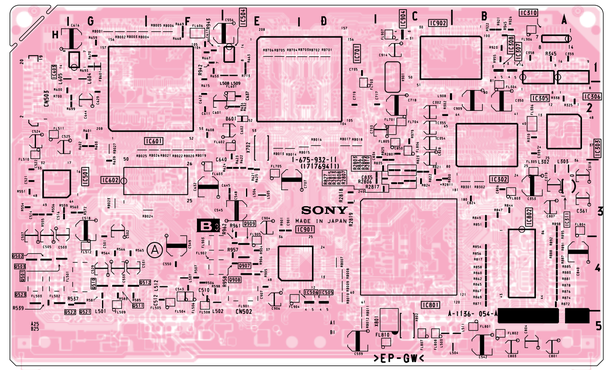
Schematic diagram
◀ B3 (1/6) board
– 131 –

Schematic diagram
B3 (2/6) board ▶
– 132 –

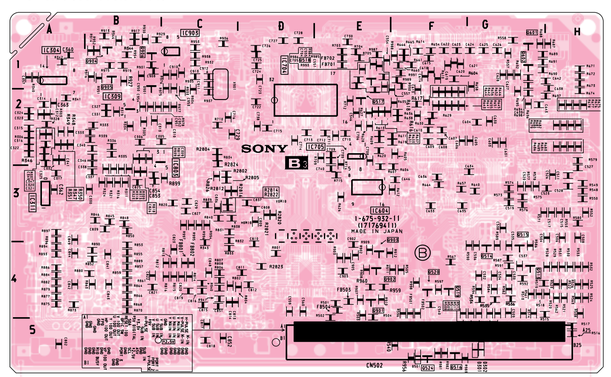
PRINTED WIRING BOARDS

B3 [DRC, MID, SUB MICON, DRC/MID CONTROLLER]

– B3 Board (Component Side) –



– B3 Board (Conductor Side) –

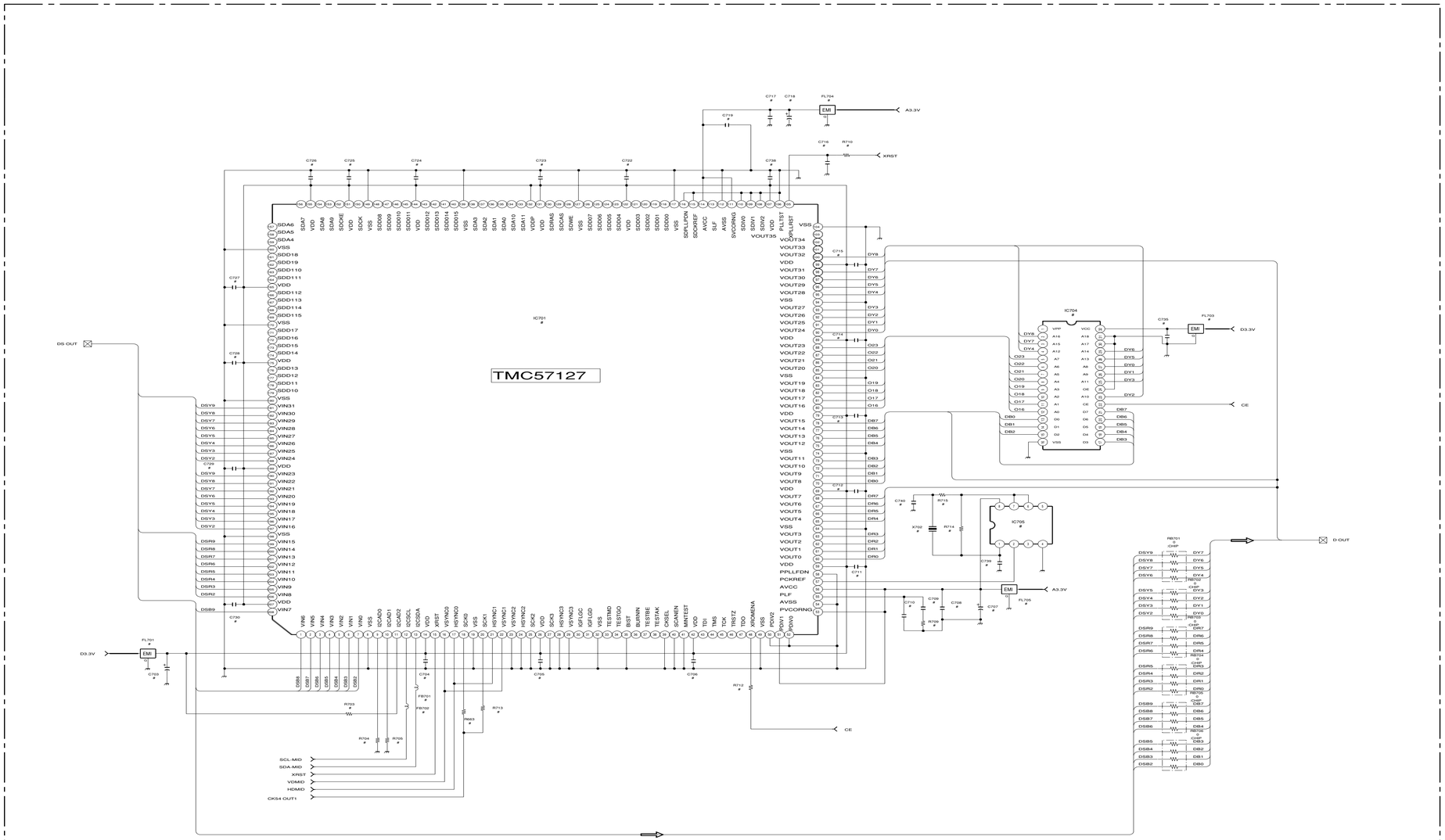


B3 BOARD (Conductor Side)

IC		Q519	D-6
		Q520	D-6
IC304	A-1	Q524	E-6
IC309	B-2	Q601	A-7
IC311	C-1	Q602	A-7
IC604	C-5	Q901	D-5
IC704	A-4	Q902	D-5
IC705	B-4	Q903	C-6
IC803	C-3	Q904	A-2
IC903	A-3	Q905	A-2
		Q906	A-2
TRANSISTOR		DIODE	
Q513	D-7		
Q514	D-7	D301	A-7
Q515	C-7	D302	B-5
Q516	E-6	D901	B-11
Q517	B-5		
Q518	A-4		

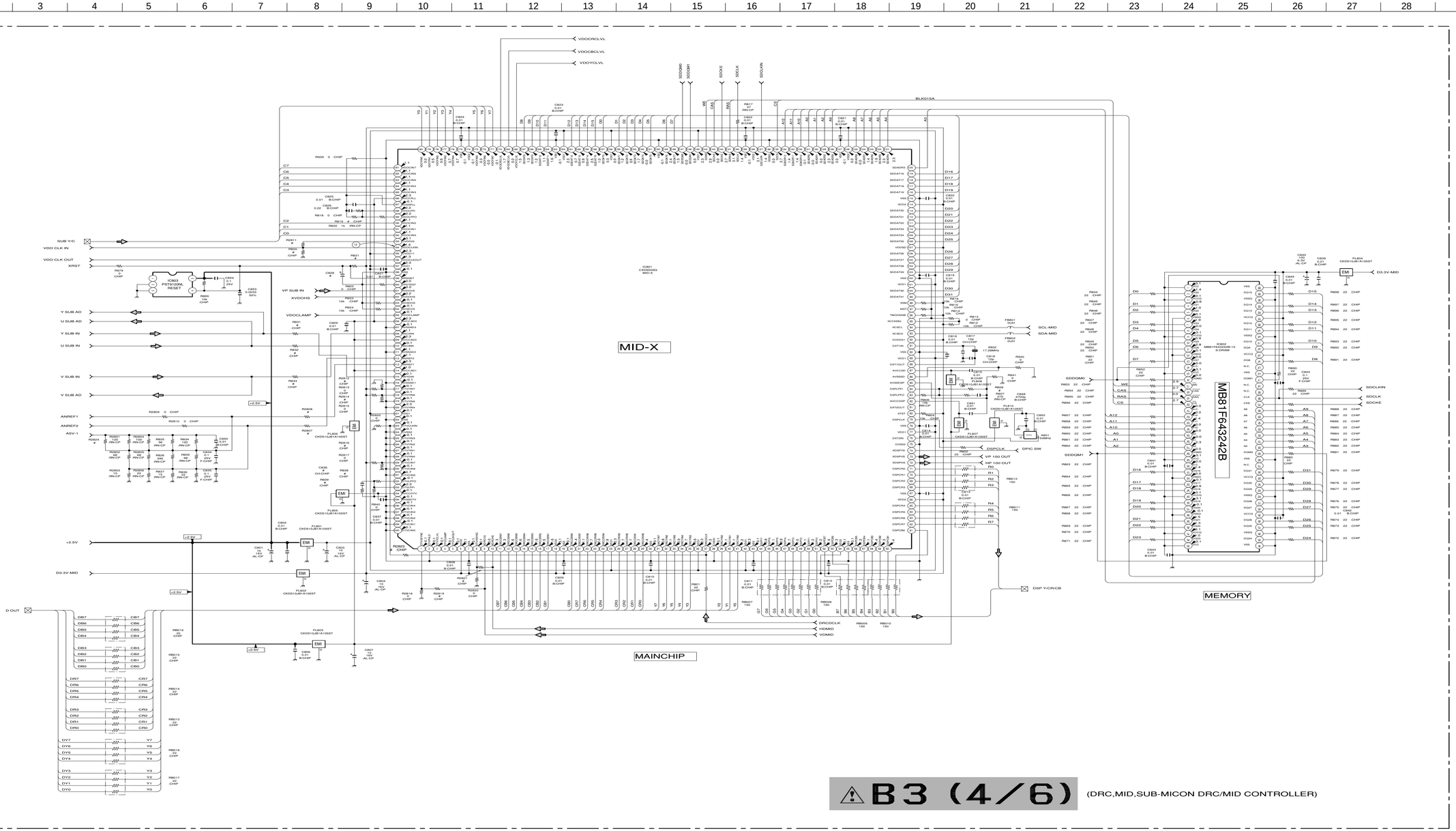
B3 BOARD (Component Side)

IC		TRANSISTOR	
IC302	C-7	Q501	D-6
IC303	B-8	Q502	E-7
IC305	B-7	Q503	F-6
IC306	B-8	Q510	D-2
IC307	A-7	Q511	F-1
IC308	A-7	Q512	D-2
IC310	A-7	Q521	E-2
IC311	C-8	Q522	E-1
IC501	C-1	Q523	D-1
IC504	A-4	Q907	D-4
IC505	D-5	Q908	D-3
IC506	D-4	Q909	C-4
IC601	I-8	DIODE	
IC602	H-6		
IC603	D-8	D601	I-8
IC701	A-5		
IC801	E-6		
IC802	C-7		
IC901	I-13		
IC902	A-6		
IC904	A-6		

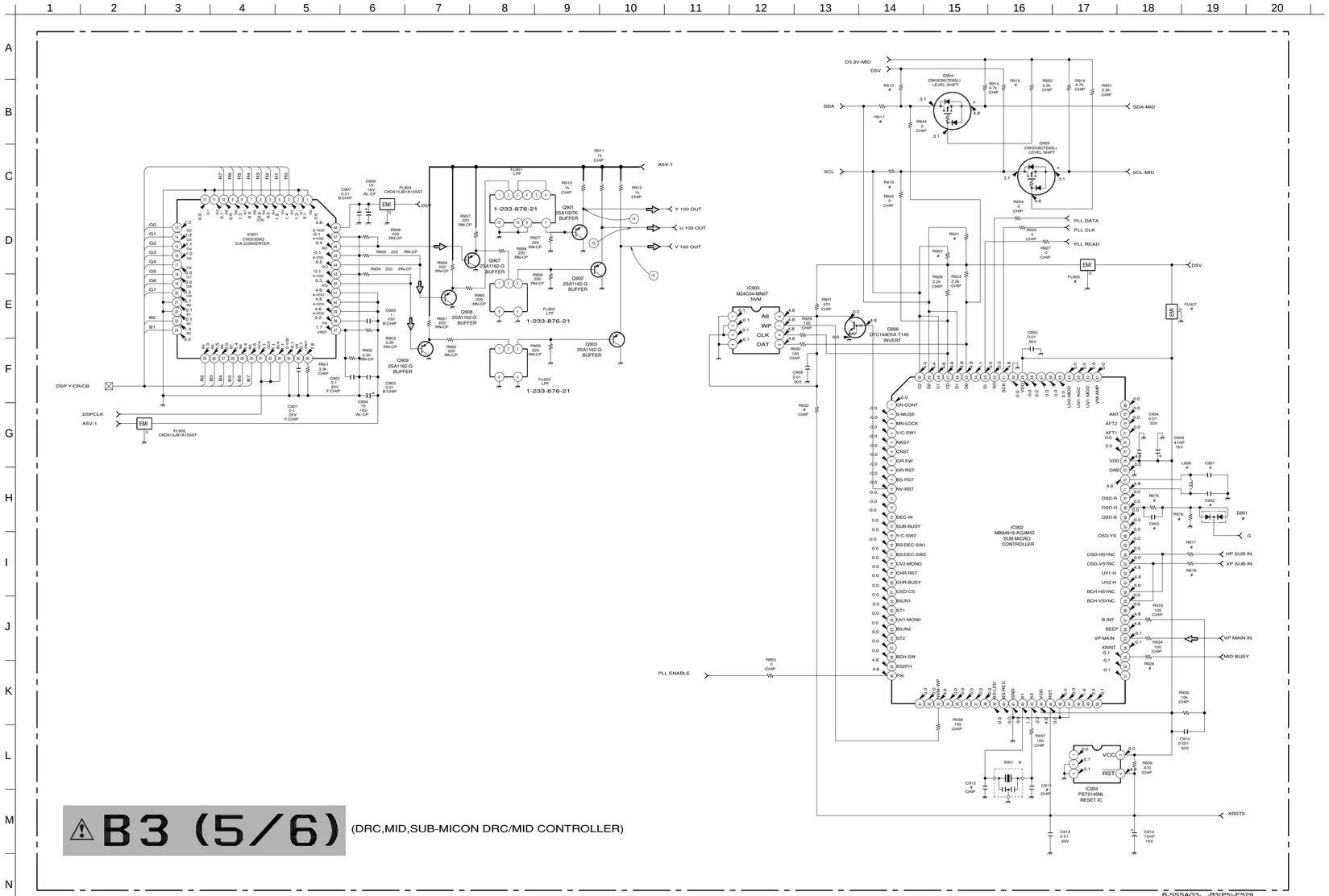


B3 (3/6) (DRC,MID,SUB-MICON DRC/MID CONTROLLER)

B-SSSAG3-...-B3(P3)-ES29


MID-X
MAINCHIP
MEMORY
MB81F643242B
B3 (4/6)
(DRC,MID,SUB-MICON DRC/MID CONTROLLER)
B-SSSAG3-...-B3(P4)-ES29

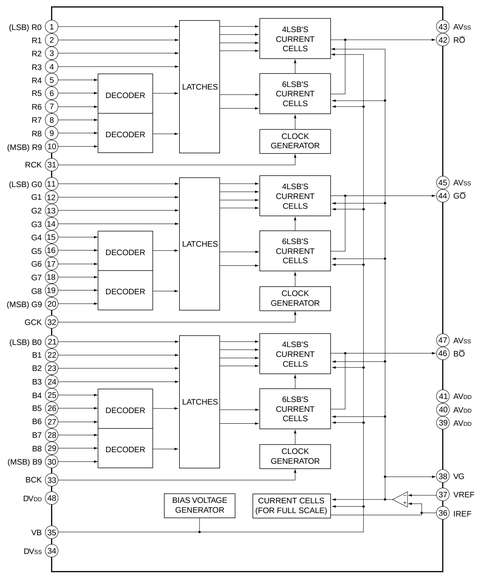
(11) Schematic Diagram of B3 (5/6) Board



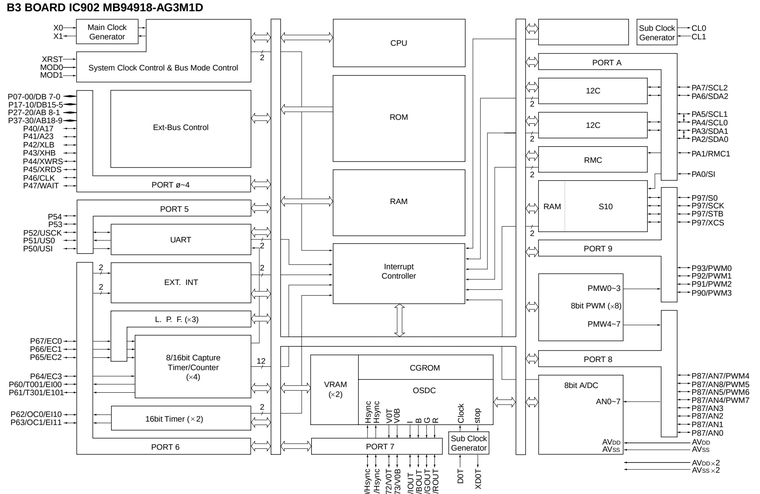
B3 (5/6) (DRC,MID,SUB-MICON DRC/MID CONTROLLER)

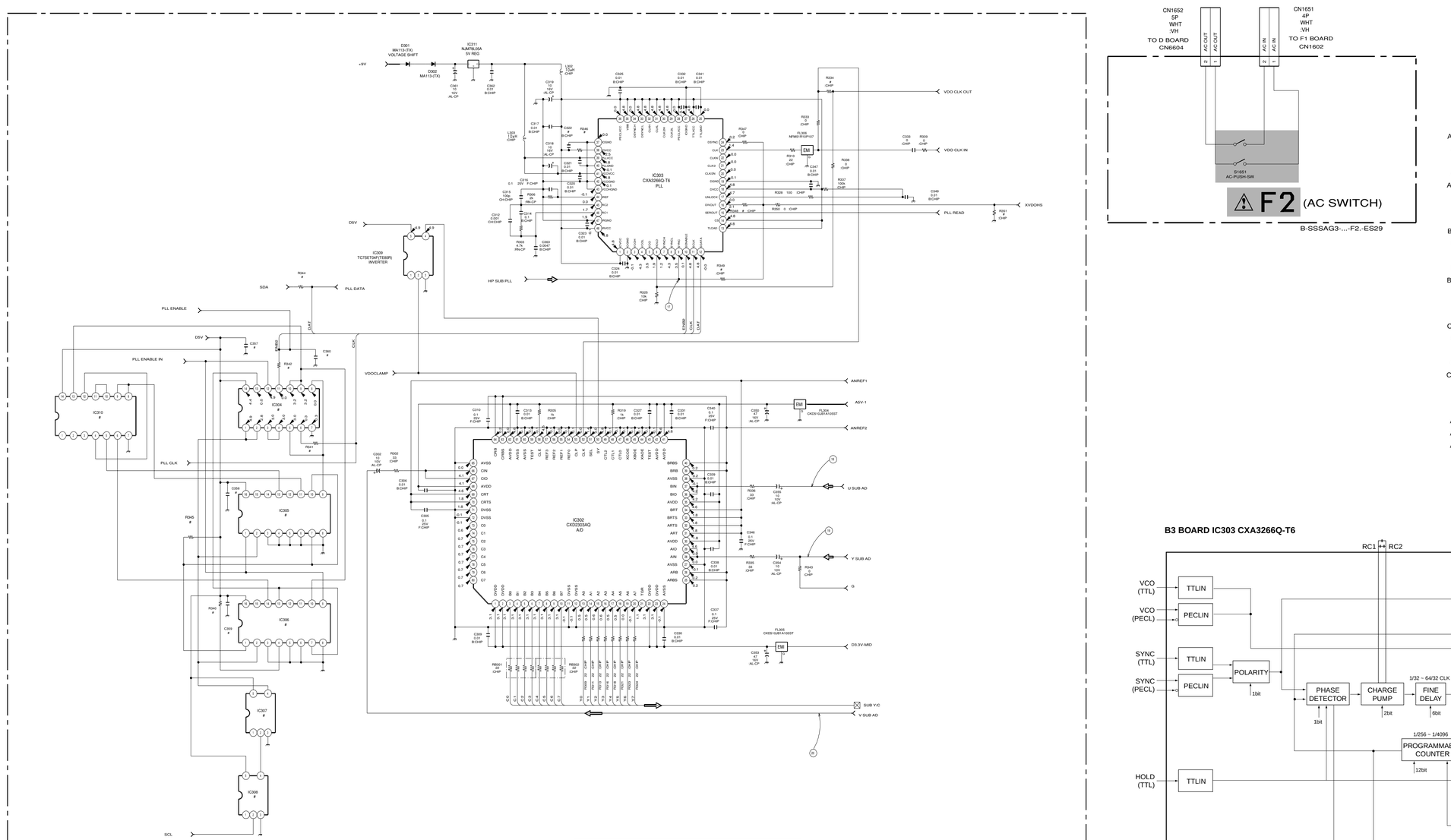
B-SSSAG3-...-B3(P5)-ES29

B3 BOARD IC901 CXD2309Q



B3 BOARD IC902 MB94918-AG3M1D



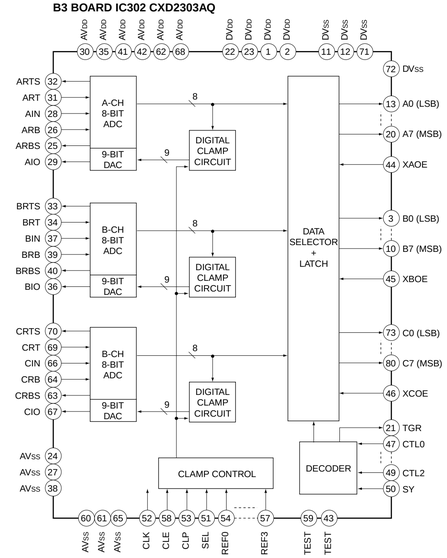


⚠B3 (6/6) (DRC,MID,SUB-MICON DRC/MID CONTROLLER)

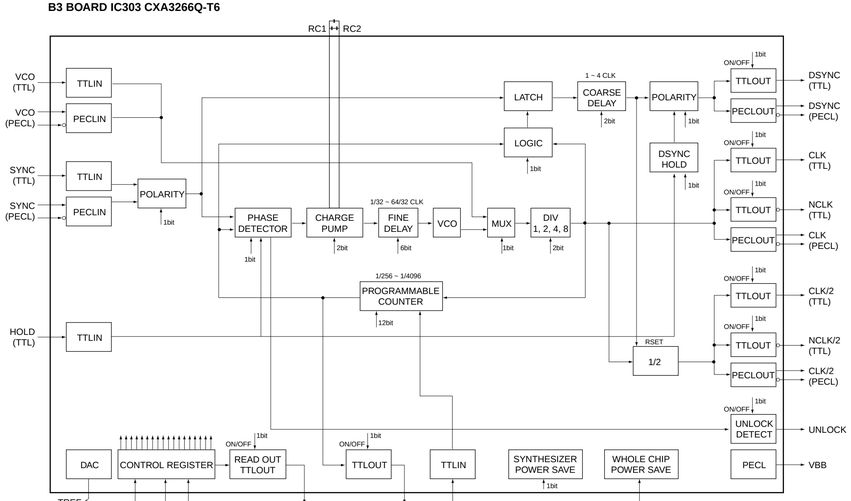
⚠F2 (AC SWITCH)

B-SSSAG3-...-F2.-ES29

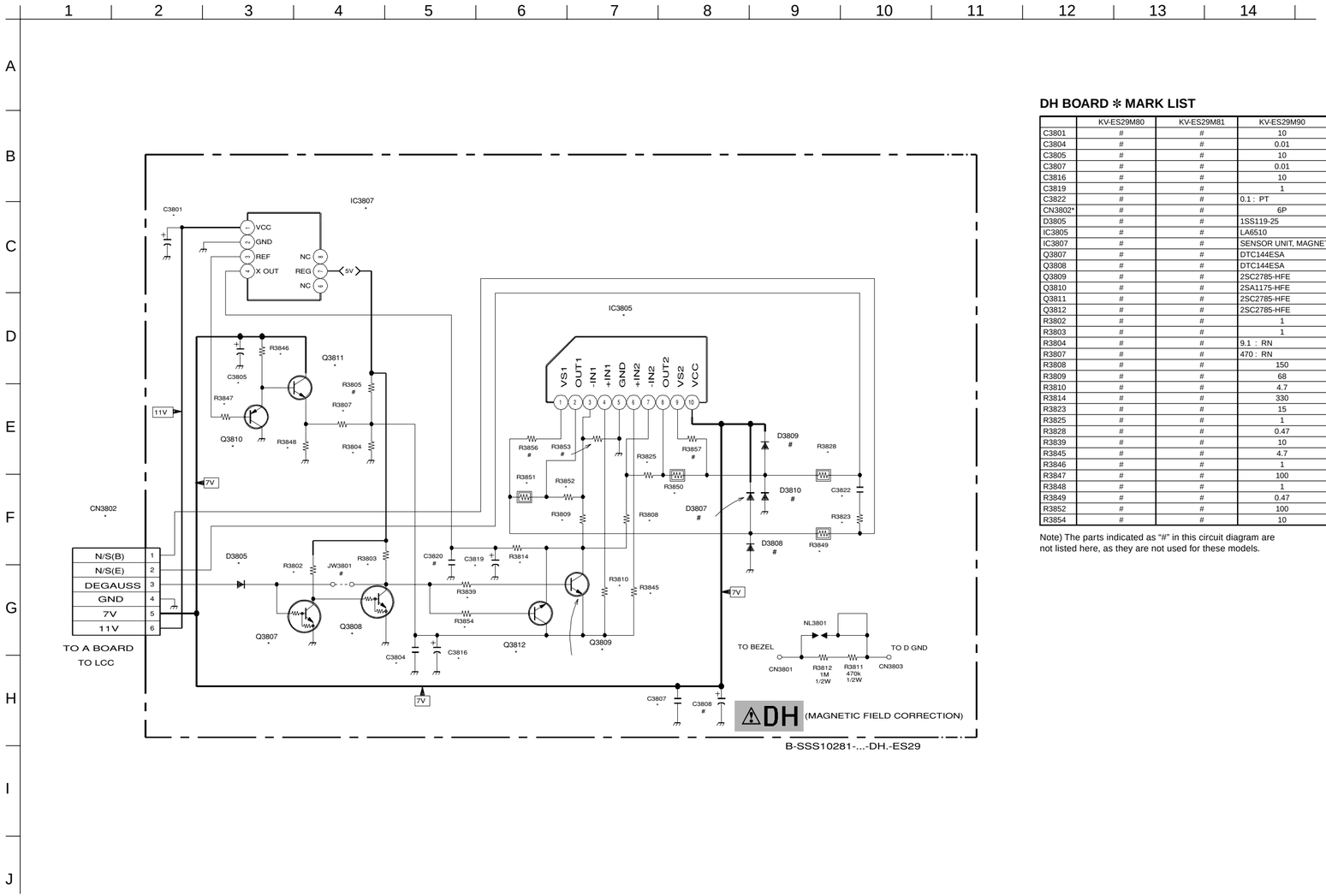
B3 BOARD IC302 CXD2303AQ



B3 BOARD IC303 CXA3266Q-T6



(13) Schematic Diagram of DH Board



DH BOARD ✻ MARK LIST

	KV-ES29M80	KV-ES29M81	KV-ES29M90
C3801	#	#	10
C3804	#	#	0.01
C3805	#	#	10
C3807	#	#	0.01
C3816	#	#	10
C3819	#	#	1
C3822	#	#	0.1 : PT
CN3802*	#	#	6P
D3805	#	#	1SS119-25
IC3805	#	#	LA6510
IC3807	#	#	SENSOR UNIT, MAGNETIC
Q3807	#	#	DTC144ESA
Q3808	#	#	DTC144ESA
Q3809	#	#	2SC2785-HFE
Q3810	#	#	2SA1175-HFE
Q3811	#	#	2SC2785-HFE
Q3812	#	#	2SC2785-HFE
R3802	#	#	1
R3803	#	#	1
R3804	#	#	9.1 : RN
R3807	#	#	470 : RN
R3808	#	#	150
R3809	#	#	68
R3810	#	#	4.7
R3814	#	#	330
R3823	#	#	15
R3825	#	#	1
R3828	#	#	0.47
R3839	#	#	10
R3845	#	#	4.7
R3846	#	#	1
R3847	#	#	100
R3848	#	#	1
R3849	#	#	0.47
R3852	#	#	100
R3854	#	#	10

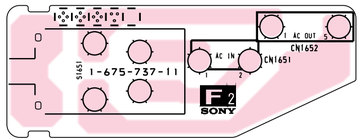
Note) The parts indicated as "#" in this circuit diagram are not listed here, as they are not used for these models.

PRINTED WIRING BOARDS

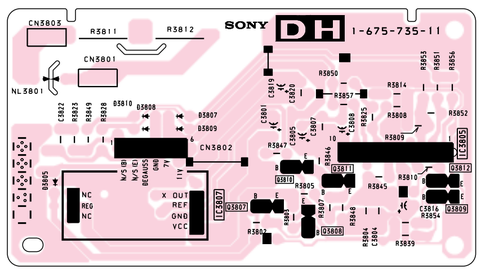
F2 [AC SWITCH]

DH [MAGNETIC FIELD CORRECTION]

– F2 Board –



– DH Board –

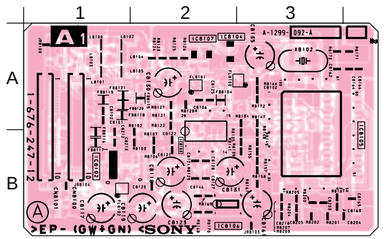


Schematic diagram
◀ DH board

PRINTED WIRING BOARDS

A1 [AUDIO DSP] **E1** [H OUT PROTECTION]

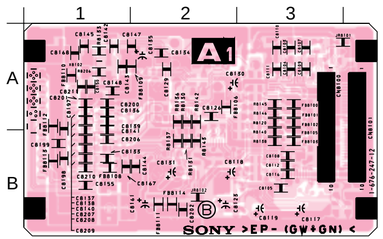
– A1 Board (Component Side) –



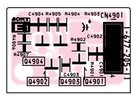
A1 BOARD (Component Side)

IC	
IC8102	B-1
IC8104	A-2
IC8105	B-4
IC8106	B-3
IC8108	B-1

– A1 Board (Conductor Side) –

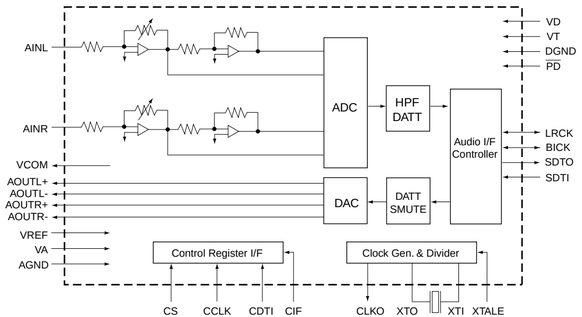


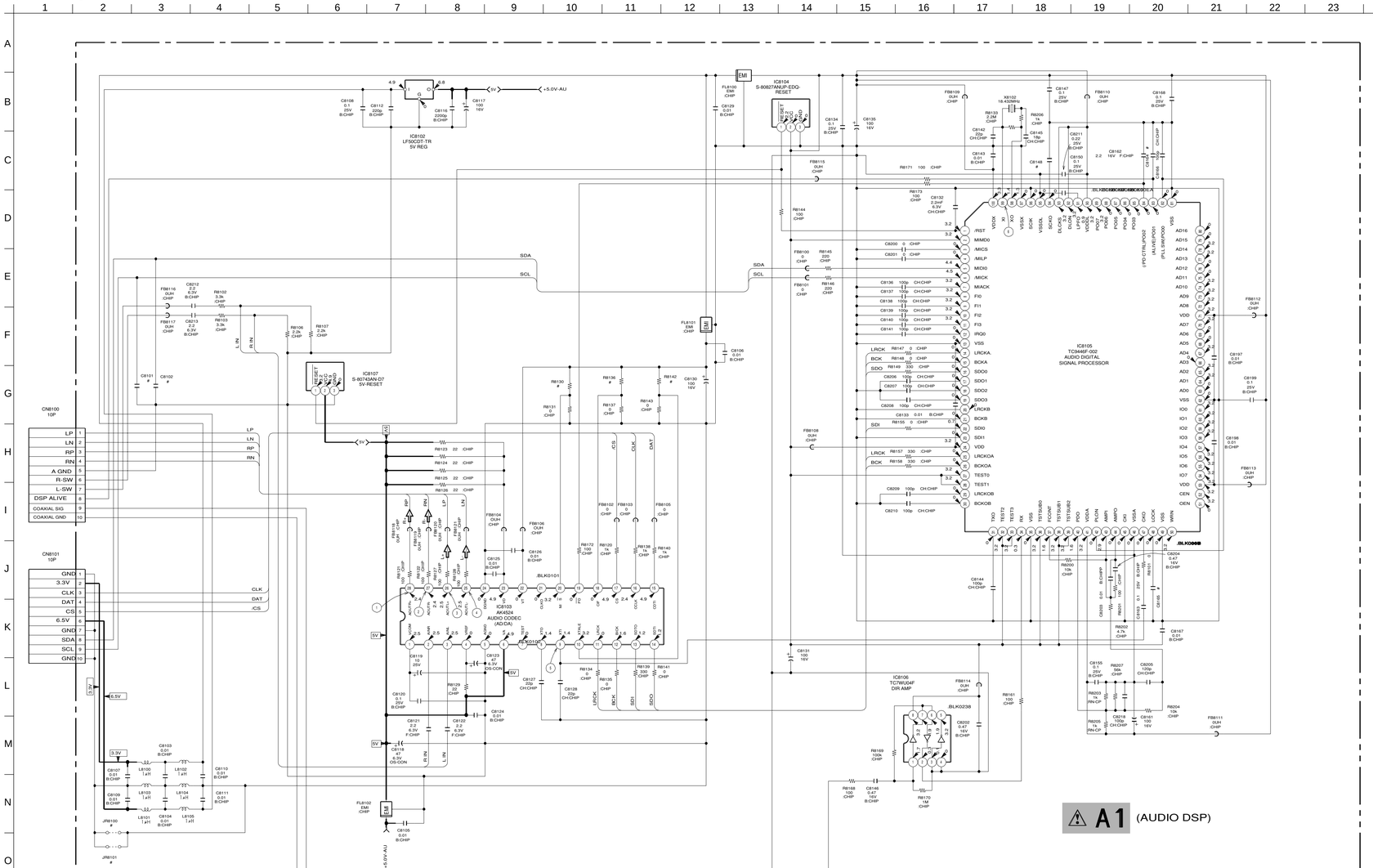
– E1 Board –

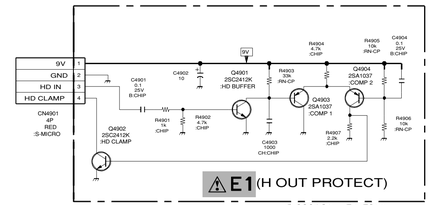


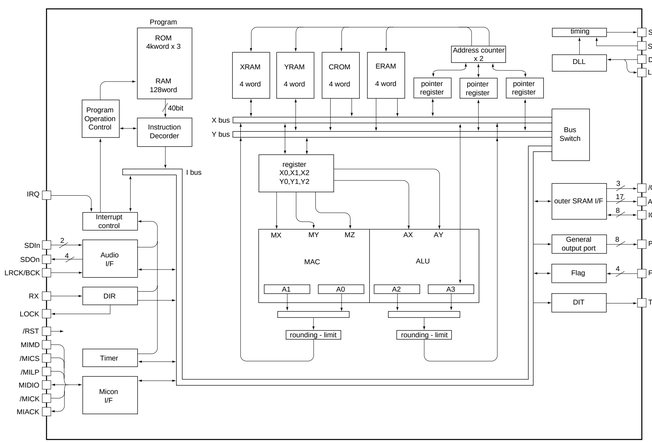
KV-ES29M80/ES29M81/ES29M90
RM-916

A1 Board IC8103 AK4524









Schematic diagrams
◀ A1 E1 boards

Schematic diagrams
BC4 V boards ▶

⚠ BC4

(Y/C SEP)

5V	A5V
5V-2	D5V
3.3V	A3.3V
3.3V-2	D3.3V
9V	9V

B-SSSAG3-...-BC4.-ES29

⚠ V (TELETEXT)

B-SSSAG3-...-V.-ES29

V BOARD WAVEFORMS

1	2
3.9Vp-p (V)	4.6Vp-p (V)

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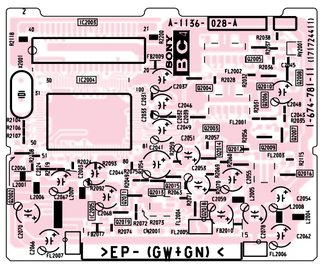
KV-ES29M80/ES29M81/ES29M90
RM-916

PRINTED WIRING BOARDS

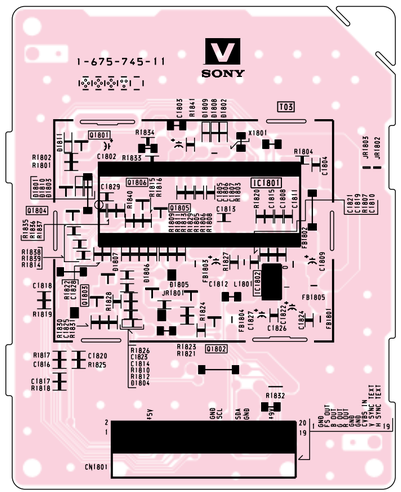
BC4 [Y/C SEP]

– BC4 Board –

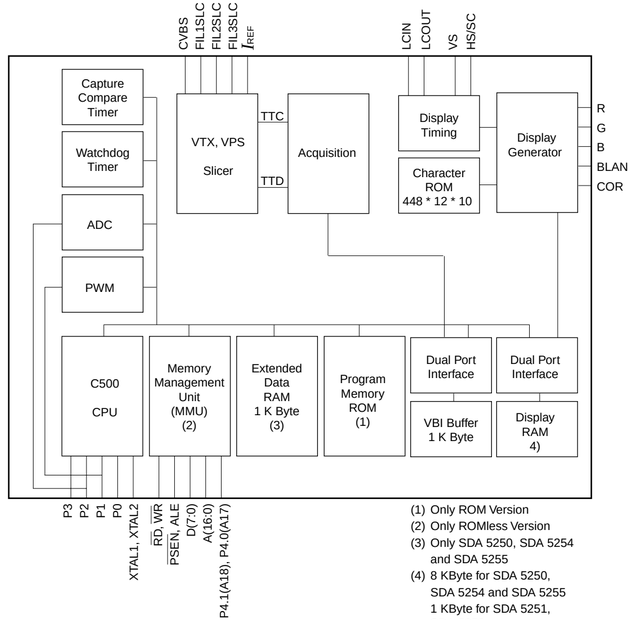


V [TELE TEXT]

– V Board –

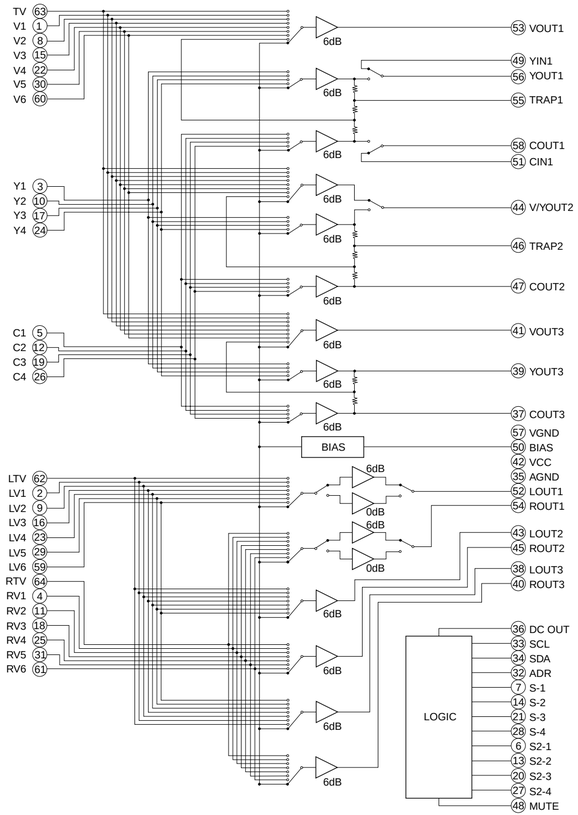


V Board IC1801 SDA5254-2B006



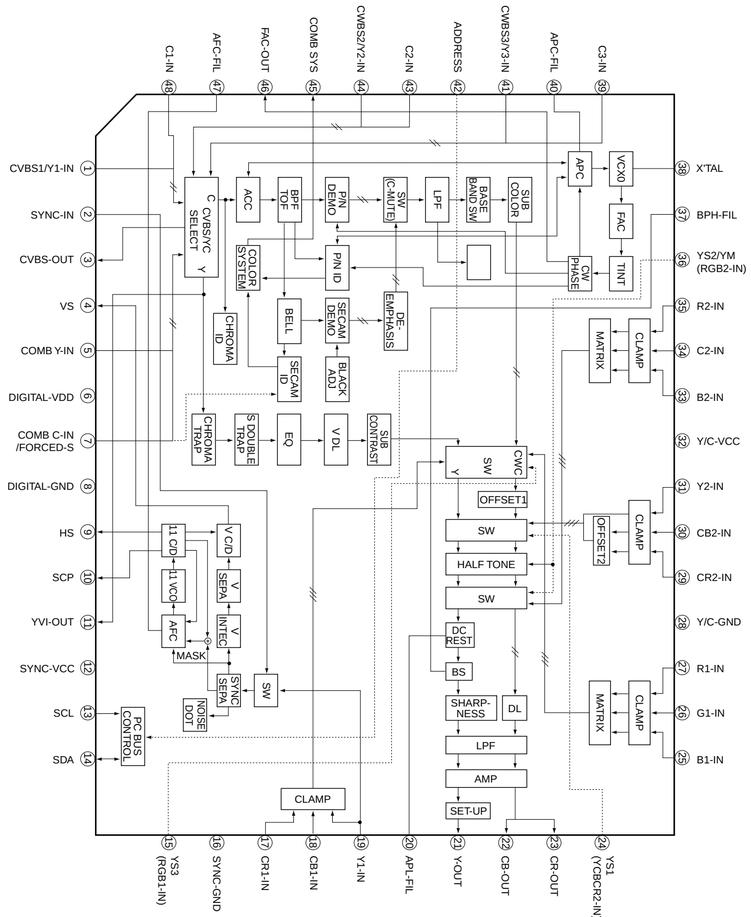
(1) Only ROM Version
(2) Only ROMless Version
(3) Only SDA 5250, SDA 5254 and SDA 5255
(4) 8 KByte for SDA 5250, SDA 5254 and SDA 5255
1 KByte for SDA 5251, SDA 5252

J Board IC8302 CXA2069Q



KV-ES29M80/ES29M81/ES29M90
RM-916

J Board IC8306 CXA2123AQ-T6

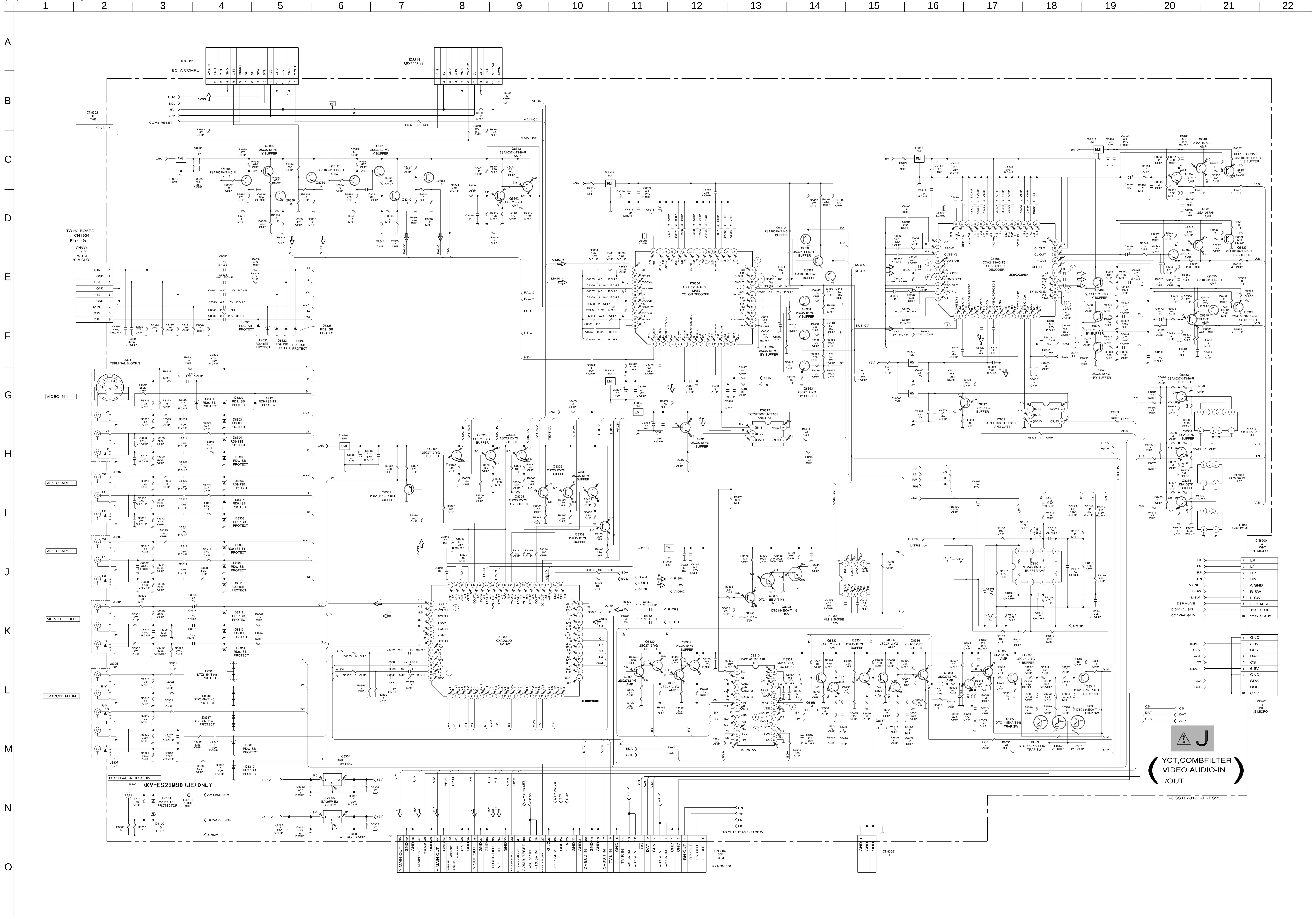


KV-ES29M80/ES29M81/ES29M90
RM-916

J BOARD WAVEFORMS

① 1.3Vp-p (H)	② 2.6Vp-p (H)	③ 1.6Vp-p (H)	④ 1.7Vp-p (H)	⑤ 1.4Vp-p
⑥ 1.4Vp-p (H)	⑦ 1.0Vp-p (H)	⑧ 1.4Vp-p (H)	⑨ 0.3Vp-p (H)	⑩ 0.5Vp-p (H)
⑪ 0.5Vp-p (H)	⑫ 0.5Vp-p (H)	⑬ 0.4Vp-p (H)	⑭ 2.1Vp-p (H)	

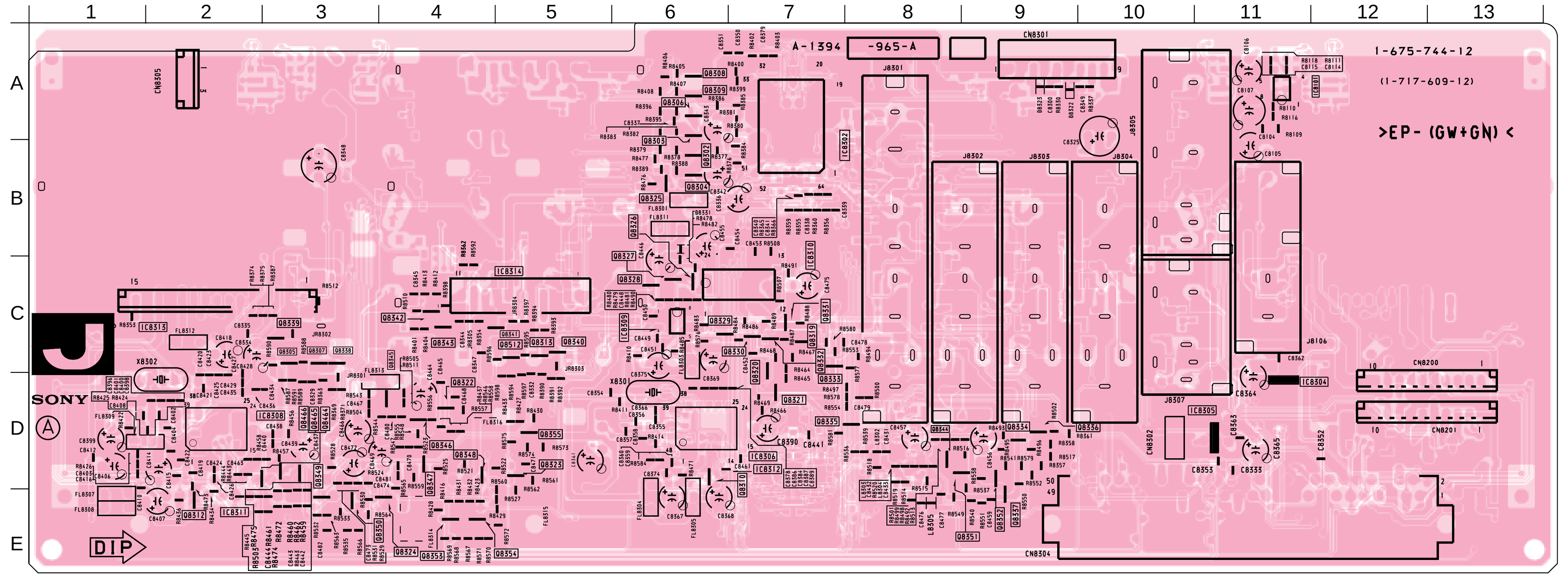
(15) Schematic Diagram of J Board



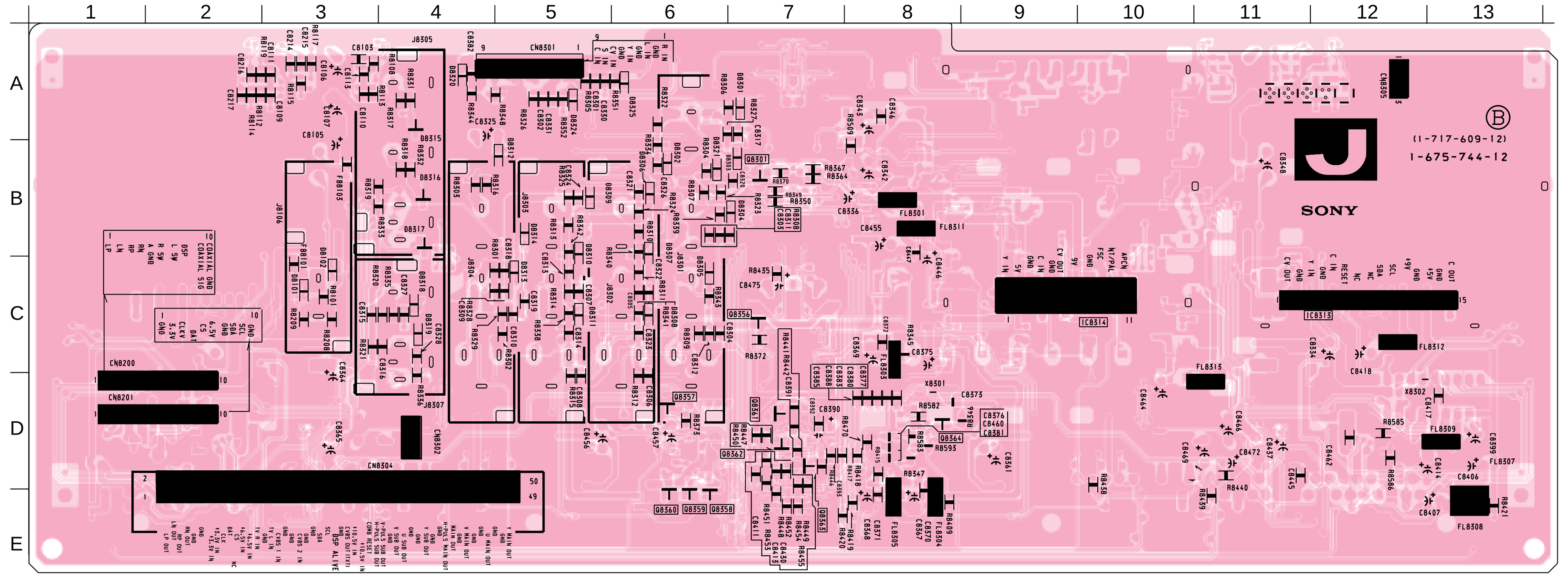
PRINTED WIRING BOARDS

J [YCT, COMB FILTER, VIDEO/AUDIO-IN/OUT]

– J Board (Component Side) –



– J Board (Conductor Side) –



J BOARD (Component Side)

IC		Q8307	C-3	Q8339	C-3
		Q8308	A-6	Q8340	C-5
IC0302	A-8	Q8309	A-6	Q8341	C-5
IC8101	A-12	Q8310	D-7	Q8342	C-4
IC8102	E-13	Q8312	E-3	Q8343	C-4
IC8103	B-13	Q8313	C-5	Q8344	D-8
IC8105	A-13	Q8319	C-7	Q8345	C-3
IC8106	C-12	Q8320	C-7	Q8346	D-4
IC8107	D-12	Q8321	D-7	Q8347	D-4
IC8304	D-12	Q8322	D-4	Q8348	D-5
IC8305	D-11	Q8323	D-5	Q8349	E-3
IC8306	D-7	Q8324	D-4	Q8350	D-4
IC8308	D-2	Q8325	B-6	Q8351	D-9
IC8309	C-6	Q8326	B-6	Q8352	E-9
IC8310	B-7	Q8327	B-6	Q8353	E-5
IC8311	E-3	Q8328	C-6	Q8354	E-5
IC8312	D-7	Q8329	C-7	Q8355	D-5
IC8313	C-2	Q8330	C-7		
IC8314	B-5	Q8331	C-7		
TRANSISTOR		Q8332	C-7		
		Q8333	C-7		
Q8302	A-6	Q8334	D-9		
Q8303	A-6	Q8335	D-7		
Q8304	B-6	Q8336	D10		
Q8305	C-3	Q8337	E-9		
Q8306	A-6	Q8338	C-3		

J BOARD (Conductor Side)

IC		D8302	B-6
		D8303	B-7
IC8104	B-2	D8304	B-7
IC8313	C-12	D8305	C-6
IC8314	C-10	D8306	B-6
TRANSISTOR		D8307	B-6
		D8308	C-6
Q8301	B-7	D8309	B-6
Q8356	C-7	D8310	B-5
Q8357	D-6	D8311	C-5
Q8358	E-7	D8313	C-5
Q8359	E-6	D8314	B-5
Q8360	E-6	D8315	A-4
DIODE		D8316	B-4
		D8317	B-4
D8101	C-3	D8318	C-4
D8102	C-3	D8319	C-4
D8301	A-4	D8320	A-4
		D8321	B-6
		D8325	A-4

Schematic diagram ← J board

6-5. SEMICONDUCTORS

DIODE

D1NS4
ERA38-06
ERA85-009
RD10ESB2
RD12ES-B2
RD13ES-B2
RD15ES-B2
RD18ESB2
RD2.2ES-B
RD2.7ESB2
RD22ESB
RD3.6ES-B1
RD3.9ES-B2
RD30ESB2
RD4.7ESB2
RD5.6ES-B
RD6.8ES-B2
RD7.5ESB2
1SS119-25

DTZ9.1
MA111-(K8).S0
MA113-(TX)
RD3.0B2
RD5.6SB3
RD9.1S-B

D4SB60L

RD9.1ES-L2

D1NL20U-TR

DAN202K

EL1Z
GP08D
HS583TD
RGP02-20EL-6394

MA8039

ON3171-R

S3L20UF4

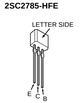
LED

SPB-26MVWF

TRANSISTOR

DTA144EKA-T146
DTC114EK
2SA1037AK-T146-R
2SA1162-G
2SA1776TV2Q
2SC1623-L5L6
2SC2712-YG
2SD601A-Q-TX
2SD601-Q-TX

DTC144ESA
TR DTC144EKA
2SA1175-HFE
2SC2785-HFE



2SA2005

2SB733-34
2SD774-34

2SC3840(3)

2SK2036(TE85L)
2SK2251-01-F19

IRF620
IRF720-LF49

IC

AK4524
LF50CDT-TR
MM1115XFBE
NJM4560M
TC7WU04F
TDA7315D013TR
***u*PC4558G2**

Dual In-line Package
Pin 6~98

LA6510

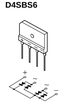
LM78L05ACZ

MSM514265C-60SJ

STV9379

TA7805S

D4SBL20U
D4SBS6

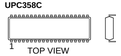


MA3062M-TX
MA3091
STZ6.8N-T146

D5S4M

2SC2500-B

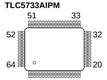
CA0005AD
CA0007AD
NJM3404AD
TOP209P
UPC393C
UPC358C



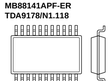
Dual In-line Package
Pin 6~98

TL431CZ

TLC5733AIPM

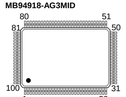


MB88141APF-ER
TDA9178/N1.118



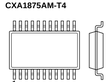
Small Outline L-leaded
Package
Pin 8~98

MB94918-AG3MID



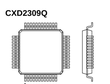
LA6500-FA

CXA1211M
CXA1875AM-T4



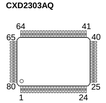
8pin

CXD2309Q



Quad Flat L-leaded
Package
Pin 20~996

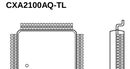
CXD2303AQ



D10SC4M
D10SBS4F

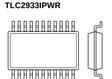
CXA3266Q-T6
CXD2090Q

CXA2100AQ-TL



UPC1093J-1-T

TLC2932IPW
TLC2933IPWR



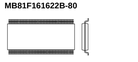
14pin

PQ3TZ53U

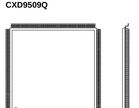
LM393N

8pin

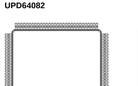
MB81F161622B-80



CXD9509Q



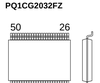
UPD64082



MB81F64324B-10FN

TC7SET04F(TE85R)

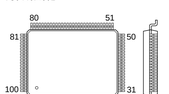
PQ1CG2032FZ



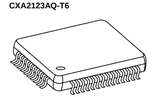
PQ5EV3

MCR515Z

TC9446F-002



CXA2123AQ-T6



P6KE200AG23
UF4005PKG23

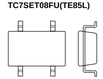
2SC5480-01

2SC5511

SBX1981-51P

DM-58

PST9120NL
PST9145NL
TC7SET08FU(TE85L)



5pin

TDA6111Q/N4

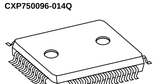
BA12T

BA09T

BA05FP-E2
BA05T

BA09FP-E2

CXP750096-014Q



SECTION 7
EXPLODED VIEWS

NOTE:

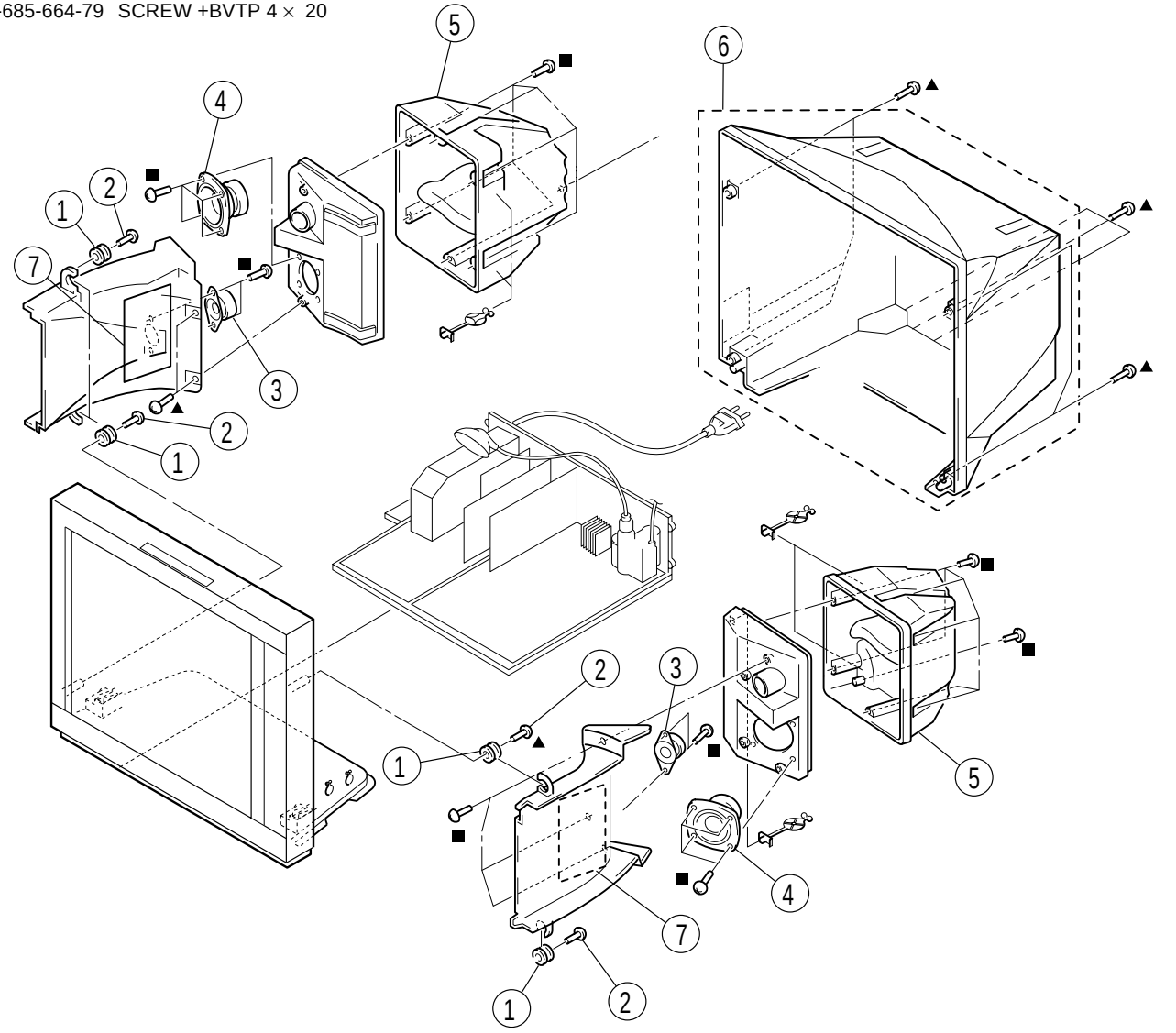
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " ∗ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

CAUTION: The aluminium frame must be connected to the ground with the ground cable from DH board. Failure to do so, may cause the user to suffer electric shock.

7-1. SPEAKER BRACKET

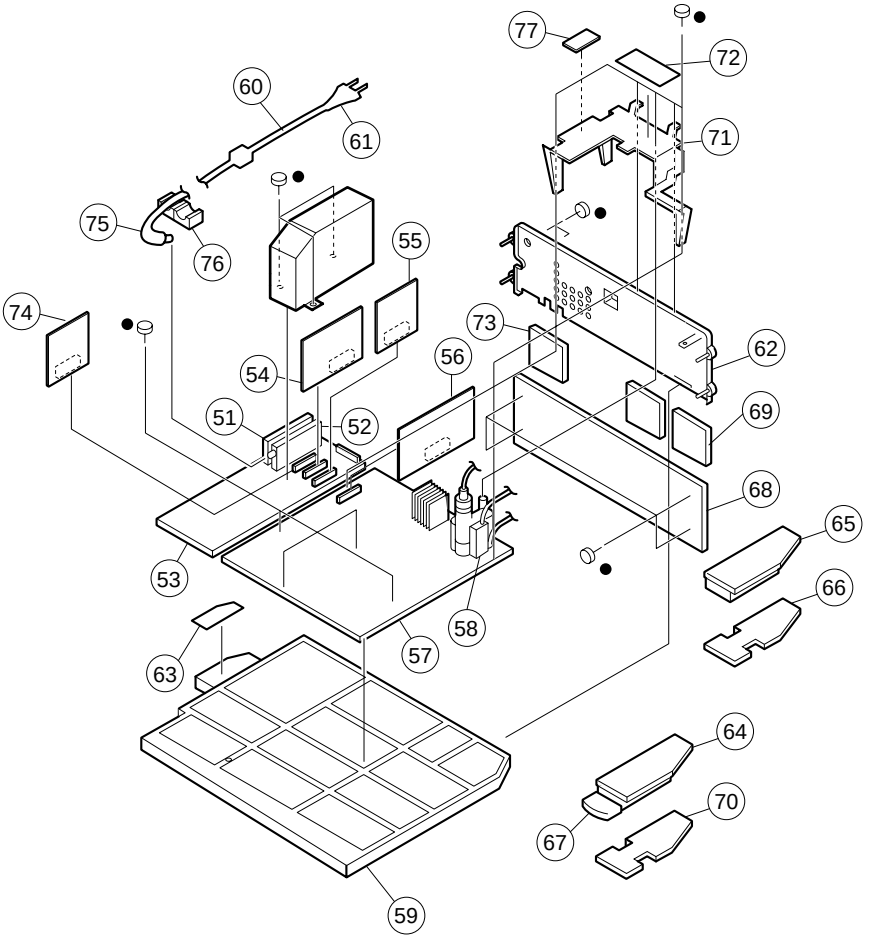
■: 7-685-663-71 SCREW +BVTP 4 × 16
▲: 7-685-664-79 SCREW +BVTP 4 × 20



REF. NO.		PART NO.	DESCRIPTION	REMARK
1		4-374-745-11	CUSHION (A)	
2		4-064-929-02	SCREW, TP + TWH 4x25	
3		1-529-532-11	SPEAKER (5CM)	
4		1-505-473-11	SPEAKER (12CM)	
5	*	4-071-302-01	DUCT, SPEAKER	
6		X-4036-878-2	COVER ASSY, REAR	
7	*	4-073-084-01	DUCT, CUSHION	

7-2. CHASSIS

●: 7-685-648-71 SCREW +BVTP 3 × 12

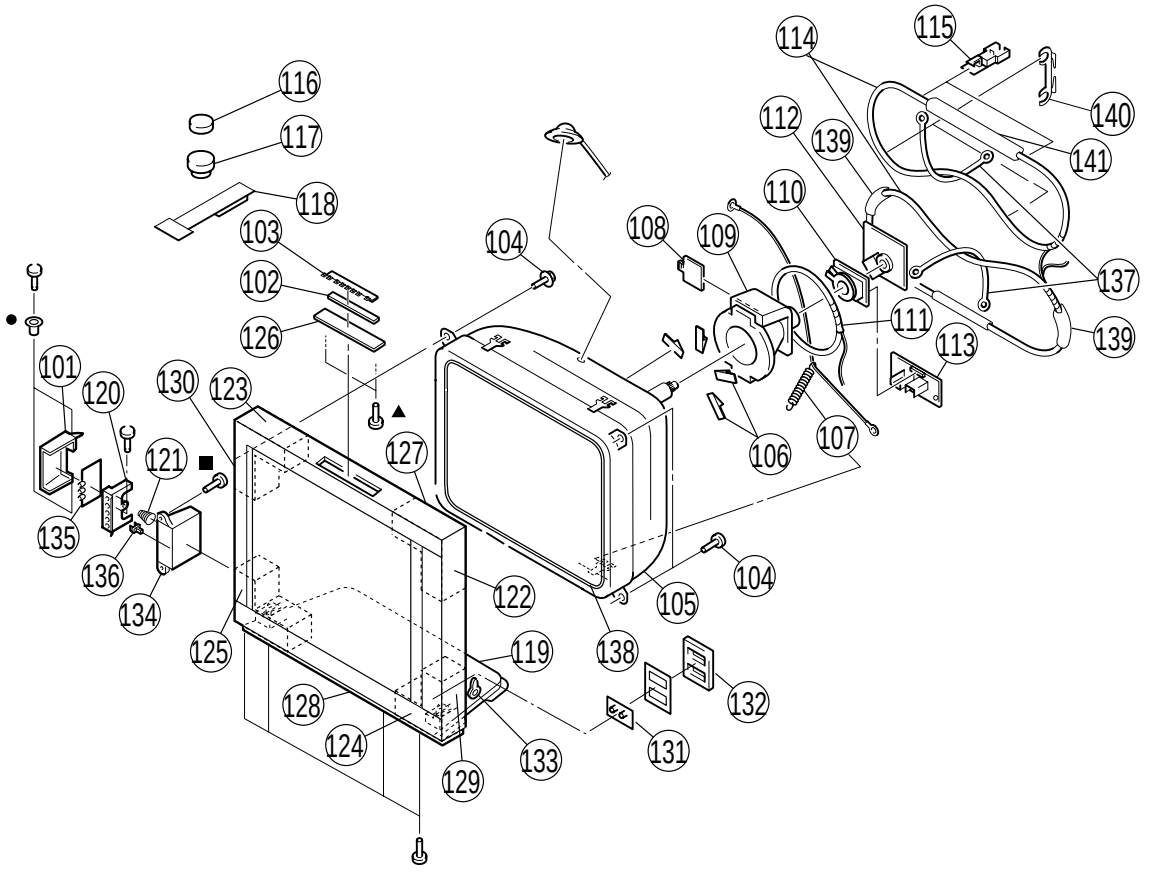


REF. NO.		PART NO.	DESCRIPTION	REMARK
51		8-598-450-10	TUNER, FSS BTF-LG434 (EXCEPT KV-ES29M90)	
		8-598-452-30	TUNER, FSS BTF-WG442 (KV-ES29M90)	
52		8-598-508-10	TUNER, FSS BTF-LG436	
53	*	A-1299-133-A	A BOARD COMPLETE (KV-ES29M80)	
		A-1299-134-A	A BOARD COMPLETE (KV-ES29M81)	
		A-1299-160-A	A BOARD COMPLETE (KV-ES29M90)	
54	*	A-1136-054-A	B3 BOARD COMPLETE	
55	*	A-1343-743-A	E BOARD MOUNT	
56	*	A-1343-742-A	D1 BOARD MOUNT	
57	*	A-1346-882-A	D BOARD COMPLETE	
58	⚠	X-4560-173-1	TRANSFORMER ASSY, FLYBACK (NX-4522//J1B4)	
59	*	4-071-314-01	BRACKET, MAIN	
60	⚠	4-022-115-01	HOLDER, AC CORD	
61	⚠	1-574-062-61	CORD, POWER (WITH CONNECTOR) 2.5A/250V (KV-ES29M80/ES29M81)	
	⚠	1-790-299-11	CORD, POWER (WITH NOISE FILTER) (KV-ES29M90)	
62	*	4-071-315-01	BRACKET, TERMINAL	

REF. NO.		PART NO.	DESCRIPTION	REMARK
63	*	A-1241-402-A	F1 BOARD MOUNT	
64	*	4-071-307-01	HOLDER, F2/H1 BOARD	
65	*	4-071-307-01	HOLDER, F2/H1 BOARD	
66	*	A-1372-728-A	H1 BOARD MOUNT	
67		4-071-305-01	BUTTON, POWER	
68	*	A-1394-965-A	J BOARD COMPLETE	
69	*	A-1136-069-A	BC4 BOARD COMPLETE	
70	*	A-1241-403-A	F2 BOARD MOUNT	
71	*	4-071-316-01	SUPPORTER, PWB	
72		A-1343-791-A	DH BOARD MOUNT (KV-ES29M80/ES29M81)	
		A-1343-798-A	DH BOARD MOUNT (KV-ES29M90)	
73	*	A-1299-092-A	A1 BOARD COMPLETE	
74	*	A-1342-516-A	V BOARD MOUNTED (KV-ES29M81 ONLY)	
75		1-790-082-11	CABLE RF	
76		1-543-827-31	CLAMP, SLEEVE FERRITE	
77	*	A-1343-817-A	E1 BOARD MOUNTED	

7-3. PICTURE TUBE

●: 7-685-648-71 SCREW +BVTP 3 × 12
■: 7-685-663-71 SCREW +BVTP 4 × 16
▲: 7-685-661-41 SCREW +BVTP 4 × 12



REF. NO.		PART NO.	DESCRIPTION	REMARK
101		4-071-308-01	DOOR, CONTROL	
102	*	A-1372-730-A	H3 BOARD MOUNT	
103		4-071-312-01	BUTTON, TOP SW (KV-ES29M90)	
		4-071-312-02	BUTTON, TOP SW (KV-ES29M80/ES29M81)	
104		4-046-765-02	SCREW TAPPING 7 + CROWN WASHER	
105	⚠	8-735-041-05	PICTURE TUBE (M68LNH010X)	
106		3-703-961-01	SPACER, DY	
107		4-369-318-61	SPRING, TENSION	
108		2-163-920-01	PLATE, TLH CORRECTION	
109	⚠	8-451-504-51	DEFLECTION YOKE (Y29RSC-Y3)	
110		8-453-011-11	NA299-M	
111		1-452-896-11	COIL, NA ROTATION (RT200)	
112	*	A-1332-005-A	C BOARD MOUNT	
113	*	A-1342-515-A	VM BOARD MOUNT	
114	⚠	1-419-294-11	COIL, DEGAUSSING	
115	*	4-062-970-01	CLIP (29RSN), DGC	
116		1-452-032-00	MAGNET,DISC	
117		1-452-094-00	CIRCULAR DISC MAGNET B	
118		4-051-734-21	PIECE B(120), CONV. CORRECT	
119	*	4-071-297-02	COVER, FRONT	
120	*	X-4037-280-1	HOLDER ASSY, CONTROL	
121		4-071-323-01	SPRING, CONE	
122	*	4-071-298-02	BRACKET (TR), CRT	

REF. NO.		PART NO.	DESCRIPTION	REMARK
123	*	4-071-299-02	BRACKET (TL), CRT	
124	*	4-071-300-02	BRACKET (BR), CRT	
125	*	4-071-301-02	BRACKET (BL), CRT	
126	*	4-071-311-01	HOLDER, H3	
127		X-4037-416-1	FRAME SUB-ASSY, TOP (KV-ES29M80/ES29M81)	
		X-4037-540-1	FRAME SUB-ASSY, TOP (KV-ES29M90)	
128		X-4037-417-1	FRAME SUB-ASSY, BOTTOM	
129		X-4037-418-1	FRAME SUB-ASSY, RIGHT	
130		X-4037-419-1	FRAME SUB-ASSY, LEFT	
131	*	4-071-306-01	LIGHT, GUIDE	
132	*	4-072-950-01	BRACKET, LIGHT GUIDE	
133	*	4-073-080-01	FASTEN	
134	*	4-071-310-03	BRACKET, SIDE	
135	*	A-1372-729-A	H2 BOARD MOUNT	
136		4-047-464-01	CATCHER, PUSH	
137		4-068-028-02	BAND, DGC	
138	⚠	1-419-469-11	COIL, LANDING CORRECTION (KV-ES29M90 ONLY)	
139	*	4-074-513-01	CUSHION (L), DGC	
140	*	4-064-883-03	HOLDER, DGC	
141	*	4-063-935-02	CUSHION (50 x 550), DGC	

SECTION 8
ELECTRICAL PARTS LIST

A

NOTE:

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- All resistors are in ohms
- F : nonflammable

CAPACITORS
- MF : µF, PF : µµF

COILS
- MMH : mH, UH : µH

REF. NO.	PART NO.	DESCRIPTION			REMARK
*	A-1299-133-A	A BOARD COMPLETE (KV-ES29M80)			
*	A-1299-134-A	A BOARD COMPLETE (KV-ES29M81)			
*	A-1299-109-A	A BORDA COMPLETE (KV-ES29M90)			
		**********			
*	1-555-110-00	CABLE, PIN			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
		<CAPACITOR>			
C004	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C005	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C006	1-107-725-11	CERAMIC CHIP	0.1MF	10%	16V
C007	1-126-933-11	ELECT	100MF	20%	16V
C009	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C010	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C012	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C013	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C014	1-126-967-11	ELECT	47MF	20%	50V
C015	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C016	1-102-852-91	CERAMIC CHIP	47PF	5%	50V
C017	1-102-525-11	CERAMIC CHIP	68PF	5%	50V
C018	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C019	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C020	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C021	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C024	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C028	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C030	1-126-960-11	ELECT	1MF	20%	50V
C031	1-107-725-11	CERAMIC CHIP	0.1MF	10%	16V
C032	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C033	1-115-339-11	CERAMIC CHIP	0.1MF	10%	50V
C034	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C103	1-107-725-11	CERAMIC CHIP	0.1MF	10%	16V
C104	1-126-933-11	ELECT	100MF	20%	16V
C107	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C108	1-126-933-11	ELECT	100MF	20%	16V
C109	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C110	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C111	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C112	1-126-933-11	ELECT	100MF	20%	16V
C113	1-126-967-11	ELECT	47MF	20%	50V
C114	1-126-967-11	ELECT	47MF	20%	50V
C301	1-126-767-11	ELECT	1000MF	20%	16V
C326	1-126-964-11	ELECT	10MF	20%	50V
C1201	1-107-725-11	CERAMIC CHIP	0.1MF	10%	16V
C1202	1-107-725-11	CERAMIC CHIP	0.1MF	10%	16V
C1203	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C1204	1-164-690-91	CERAMIC CHIP	0.0022MF	5%	50V
C1205	1-164-690-91	CERAMIC CHIP	0.0022MF	5%	50V
C1206	1-126-965-11	ELECT	22MF	20%	50V
C1207	1-107-725-11	CERAMIC CHIP	0.1MF	10%	16V
C1208	1-126-023-11	ELECT	100MF	20%	16V
C1209	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C1210	1-125-838-91	CERAMIC CHIP	2.2MF	10%	6.3V
C1211	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C1212	1-125-838-91	CERAMIC CHIP	2.2MF	10%	6.3V
C1213	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C1214	1-126-055-11	ELECT	470MF	20%	50V
C1215	1-126-055-11	ELECT	470MF	20%	50V
C1216	1-126-943-11	ELECT	2200MF	20%	25V
C1217	1-126-943-11	ELECT	2200MF	20%	25V
C1219	1-126-961-11	ELECT	2.2MF	20%	50V
C1220	1-126-961-11	ELECT	2.2MF	20%	50V
C1221	1-126-933-11	ELECT	100MF	20%	16V
C1222	1-125-838-91	CERAMIC CHIP	2.2MF	10%	6.3V
C1223	1-125-838-91	CERAMIC CHIP	2.2MF	10%	6.3V
C1224	1-125-838-91	CERAMIC CHIP	2.2MF	10%	6.3V
C1225	1-125-838-91	CERAMIC CHIP	2.2MF	10%	6.3V
C1241	1-115-339-11	CERAMIC CHIP	0.1MF	10%	50V
C1242	1-115-339-11	CERAMIC CHIP	0.1MF	10%	50V
C1243	1-115-339-11	CERAMIC CHIP	0.1MF	10%	50V
C1244	1-110-617-51	ELECT	2200MF	20%	50V
C1245	1-115-339-11	CERAMIC CHIP	0.1MF	10%	50V
C1246	1-107-823-11	CERAMIC CHIP	0.47MF	10%	16V
C1247	1-115-339-11	CERAMIC CHIP	0.1MF	10%	50V
C1248	1-110-617-51	ELECT	2200MF	20%	50V
C1249	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C1251	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C1252	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C1253	1-115-339-11	CERAMIC CHIP	0.1MF	10%	50V
C1255	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C1256	1-137-194-81	MYLAR	0.47MF	5%	50V
C1258	1-115-339-11	CERAMIC CHIP	0.1MF	10%	50V
C1259	1-115-339-11	CERAMIC CHIP	0.1MF	10%	50V
C1260	1-107-823-11	CERAMIC CHIP	0.47MF	10%	16V
C1262	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C1263	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C1264	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C1265	1-115-339-11	CERAMIC CHIP	0.1MF	10%	50V
C1267	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C1268	1-137-194-81	MYLAR	0.47MF	5%	50V
C1270	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C1271	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C1272	1-126-941-11	ELECT	470MF	20%	25V

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REF. NO.	PART NO.	DESCRIPTION			REMARK
C1273	1-115-339-11	CERAMIC CHIP	0.1MF	10%	50V
C1274	1-115-339-11	CERAMIC CHIP	0.1MF	10%	50V
C1275	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C1276	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C1277	1-164-690-91	CERAMIC CHIP	0.0022MF	5%	50V
C1279	1-164-690-91	CERAMIC CHIP	0.0022MF	5%	50V
C1281	1-115-339-11	CERAMIC CHIP	0.1MF	10%	50V
C1282	1-115-339-11	CERAMIC CHIP	0.1MF	10%	50V
C1283	1-164-690-91	CERAMIC CHIP	0.0022MF	5%	50V
C1284	1-164-690-91	CERAMIC CHIP	0.0022MF	5%	50V
C1285	1-126-933-11	ELECT	100MF	20%	16V
C1286	1-126-933-11	ELECT	100MF	20%	16V
C1287	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C1288	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C1289	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C1290	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C1291	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C1292	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C1297	1-136-177-00	MYLAR	1MF	5%	50V
C1298	1-136-177-00	MYLAR	1MF	5%	50V
C1301	1-126-933-11	ELECT	100MF	20%	16V
C1302	1-115-339-11	CERAMIC CHIP	0.1MF	10%	50V
C2200	1-126-964-11	ELECT	10MF	20%	50V
C2201	1-126-964-11	ELECT	10MF	20%	50V
C2202	1-126-964-11	ELECT	10MF	20%	50V
C2203	1-126-963-11	ELECT	4.7MF	20%	50V
C2204	1-125-838-91	CERAMIC CHIP	2.2MF	10%	6.3V
C2205	1-125-838-91	CERAMIC CHIP	2.2MF	10%	6.3V
C2206	1-126-964-11	ELECT	10MF	20%	50V
C2207	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
C2208	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
C2209	1-126-968-11	ELECT	100MF	20%	50V
C2600	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C2601	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C2602	1-126-933-11	ELECT	100MF	20%	16V
C2603	1-126-933-11	ELECT	100MF	20%	16V
C2605	1-126-925-11	ELECT	470MF	20%	10V
C2606	1-164-344-11	CERAMIC CHIP	0.068MF	10%	25V
C2608	1-126-916-11	ELECT	1000MF	20%	6.3V
C2609	1-126-935-11	ELECT	470MF	20%	6.3V
C2610	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C2611	1-126-934-11	ELECT	220MF	20%	16V
C2612	1-104-665-11	ELECT	100MF	20%	25V
C2613	1-104-665-11	ELECT	100MF	20%	25V
C2614	1-126-925-11	ELECT	470MF	20%	10V
C3330	1-107-725-11	CERAMIC CHIP	0.1MF	10%	16V
C3331	1-126-933-11	ELECT	100MF	20%	16V
C3336	1-126-933-11	ELECT	100MF	20%	16V
C3338	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C3350	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C3351	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C3352	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C3353	1-126-933-11	ELECT	100MF	20%	16V
C3354	1-126-967-11	ELECT	47MF	20%	50V
C3355	1-126-967-11	ELECT	47MF	20%	50V

REF. NO.	PART NO.	DESCRIPTION	REMARK
		<CONNECTOR>	
CN1100*	1-560-218-00	PIN, CONNECTOR 7P	
CN1108	1-695-299-11	CONNECTOR, BOARD TO BOARD 50P	
CN1116	1-695-915-11	TAB (CONTACT)	
CN1118	1-793-493-11	CONNECTOR, BOARD TO BOARD 20P (KV-ES29M81 ONLY)	
CN1138	1-564-507-61	PLUG, CONNECTOR 4P (KV-ES29M90 ONLY)	
CN1140	1-793-494-11	CONNECTOR, BOARD TO BOARD 40P	
CN1160*	1-564-513-11	PLUG, CONNECTOR 10P	
CN1162	1-900-903-64	CONNECTOR ASSY 20P	
CN1180	1-793-495-11	CONNECTOR, BOARD TO BOARD 50P	
CN1190*	1-564-510-11	PLUG, CONNECTOR 7P	
CN1193*	1-564-513-11	PLUG, CONNECTOR 10P	
CN1195*	1-564-506-11	PLUG, CONNECTOR 3P	
CN1196*	1-508-797-00	PIN, CONNECTOR 4P	
		<COMPOSITION CIRCUIT BLOCK>	
CP1300	1-251-658-31	SPLITTER RF	
		<DIODE>	
D001	8-719-073-01	DIODE MA111-(K8).S0	
D002	8-719-073-01	DIODE MA111-(K8).S0	
D003	8-719-073-01	DIODE MA111-(K8).S0	
D004	8-719-073-01	DIODE MA111-(K8).S0	
D005	8-719-073-01	DIODE MA111-(K8).S0	
D006	8-719-073-01	DIODE MA111-(K8).S0	
D007	8-719-158-18	DIODE RD5.6SB3	
D013	8-719-158-18	DIODE RD5.6SB3	
D014	8-719-073-01	DIODE MA111-(K8).S0	
D100	8-719-073-01	DIODE MA111-(K8).S0	
D300	8-719-073-01	DIODE MA111-(K8).S0	
D301	8-719-073-01	DIODE MA111-(K8).S0	
D302	8-719-073-01	DIODE MA111-(K8).S0	
D317	8-719-073-01	DIODE MA111-(K8).S0	
D1205	8-719-158-35	DIODE RD9.1SB	
D1208	8-719-073-01	DIODE MA111-(K8).S0	
D1209	8-719-073-01	DIODE MA111-(K8).S0	
D2200	8-719-158-35	DIODE RD9.1SB	
D2201	8-719-158-35	DIODE RD9.1SB	
D2600	8-719-500-70	DIODE D5S4M	
		<FERRITE BEAD>	
FB001	1-414-233-22	INDUCTOR CHIP 0UH	
FB002	1-414-233-22	INDUCTOR CHIP 0UH	
FB003	1-414-233-22	INDUCTOR CHIP 0UH	
FB004	1-414-233-22	INDUCTOR CHIP 0UH	
FB005	1-414-233-22	INDUCTOR CHIP 0UH	
FB006	1-414-233-22	INDUCTOR CHIP 0UH	
FB007	1-414-233-22	INDUCTOR CHIP 0UH	
FB008	1-414-233-22	INDUCTOR CHIP 0UH	
FB1205	1-410-397-21	FERRITE 1.1UH	
FB1206	1-410-397-21	FERRITE 1.1UH	

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REF. NO.	PART NO.	DESCRIPTION		REMARK
FB1207	1-410-397-21	FERRITE	1.1UH	
FB1208	1-410-397-21	FERRITE	1.1UH	
FB1300	1-216-295-91	SHORT	0	
		<FILTER>		
FL001	1-236-071-11	ENCAPSULATED COMPONENT		
		<IC>		
IC001	8-752-910-26	IC CXP750096-012Q		
IC002	8-759-042-02	IC S-80743AL-A7-S		
IC003	8-759-527-76	IC M24C08-MN6T		
IC004	8-759-527-75	IC M24C04-MN6T		
IC100	8-759-042-02	IC S-80743AL-A7-S		
IC1201	8-759-273-12	IC TDA7315D013TR		
IC1203	8-759-553-45	IC TDA7481		
IC1204	8-759-553-45	IC TDA7481		
IC1205	8-759-100-96	IC UPC4558G2		
IC2200	8-759-745-64	IC NJM4560M		
IC2600	8-759-394-36	IC BA09T		
IC2601	8-759-450-47	IC BA05T		
IC2603	8-759-640-19	IC PQ1CG2032FZ		
IC2604	8-759-644-37	IC PQ5EV3		
		<CHIP CONDUCTOR>		
JR001	1-216-295-91	SHORT	0	
JR002	1-216-295-91	SHORT	0	
JR102	1-216-295-91	SHORT	0	
JR107	1-216-295-91	SHORT	0	
JR109	1-216-295-91	SHORT	0 (EXCEPT KV-ES29M90)	
JR1301	1-216-295-91	SHORT	0	
JR2601	1-216-295-91	SHORT	0	
		<COIL>		
L001	1-414-856-11	INDUCTOR	10UH	
L002	1-414-856-11	INDUCTOR	10UH	
L003	1-414-751-11	INDUCTOR	1UH	
L005	1-414-856-11	INDUCTOR	10UH	
L101	1-414-856-11	INDUCTOR	10UH	
L102	1-414-856-11	INDUCTOR	10UH	
L103	1-414-856-11	INDUCTOR	10UH	
L104	1-414-856-11	INDUCTOR	10UH	
L105	1-414-856-11	INDUCTOR	10UH	
L1201	1-414-187-11	INDUCTOR	47UH	
L1202	1-416-857-11	INDUCTOR	65UH	
L1203	1-416-857-11	INDUCTOR	65UH	
L1204	1-416-966-11	INDUCTOR	0UH	
L1205	1-416-966-11	INDUCTOR	0UH	
L1300	1-414-856-11	INDUCTOR	10UH	
L2600	1-419-249-11	INDUCTOR	15UH	
L2601	1-419-249-11	INDUCTOR	15UH	
L2602	1-412-525-31	INDUCTOR	10UH	
L2603	1-412-525-31	INDUCTOR	10UH	
L3302	1-414-856-11	INDUCTOR	10UH	
L3303	1-414-856-11	INDUCTOR	10UH	
L3304	1-414-856-11	INDUCTOR	10UH	
L3305	1-414-856-11	INDUCTOR	10UH	
L3306	1-414-856-11	INDUCTOR	10UH	
		<IC LINK>		
PS1201	1-532-686-21	LINK, IC 2.7A/150V		
PS1202	1-532-686-21	LINK, IC 2.7A/150V		
PS1203	1-532-686-21	LINK, IC 2.7A/150V		
PS1204	1-532-686-21	LINK, IC 2.7A/150V		
		<TRANSISTOR>		
Q001	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q002	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q003	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q004	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q005	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q006	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q007	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q101	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q301	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q313	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q1205	1-801-806-11	TRANSISTOR DTC144EKA-T146		
Q1206	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q1207	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q1209	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q1210	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q1211	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q2200	1-801-806-11	TRANSISTOR DTC144EKA-T146		
Q2201	1-801-806-11	TRANSISTOR DTC144EKA-T146		
Q3300	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
		<RESISTOR>		
R001	1-216-033-00	RES,CHIP	220 5%	1/10W
R002	1-216-033-00	RES,CHIP	220 5%	1/10W
R003	1-216-049-91	RES,CHIP (KV-ES29M90)	1K 5%	1/10W
R004	1-216-295-91	SHORT	0	
R005	1-216-295-91	SHORT	0	
R006	1-216-033-00	RES,CHIP	220 5%	1/10W
R008	1-216-065-91	RES,CHIP	4.7K 5%	1/10W
R010	1-216-057-00	RES,CHIP	2.2K 5%	1/10W
R011	1-216-065-91	RES,CHIP	4.7K 5%	1/10W
R012	1-216-057-00	RES,CHIP	2.2K 5%	1/10W
R013	1-216-065-91	RES,CHIP	4.7K 5%	1/10W
R014	1-216-025-91	RES,CHIP	100 5%	1/10W
R015	1-216-025-91	RES,CHIP	100 5%	1/10W
R016	1-216-057-00	RES,CHIP	2.2K 5%	1/10W
R017	1-216-049-91	RES,CHIP	1K 5%	1/10W
R018	1-216-045-00	RES,CHIP	680 5%	1/10W
R019	1-216-049-91	RES,CHIP	1K 5%	1/10W
R020	1-216-057-00	RES,CHIP	2.2K 5%	1/10W
R021	1-216-295-91	SHORT	0	
R022	1-216-033-00	RES,CHIP	220 5%	1/10W
R023	1-216-025-91	RES,CHIP	100 5%	1/10W
R024	1-216-063-91	RES,CHIP	3.9K 5%	1/10W

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REF. NO.	PART NO.	DESCRIPTION			REMARK
R025	1-216-033-00	RES,CHIP	220	5%	1/10W
R026	1-216-033-00	RES,CHIP	220	5%	1/10W
R027	1-216-049-91	RES,CHIP	1K	5%	1/10W
R028	1-216-049-91	RES,CHIP	1K	5%	1/10W
R029	1-216-049-91	RES,CHIP	1K	5%	1/10W
R031	1-216-033-00	RES,CHIP	220	5%	1/10W
R032	1-216-049-91	RES,CHIP	1K	5%	1/10W
R033	1-216-033-00	RES,CHIP	220	5%	1/10W
R035	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R036	1-216-033-00	RES,CHIP	220	5%	1/10W
R037	1-216-033-00	RES,CHIP	220	5%	1/10W
R038	1-216-045-00	RES,CHIP	680	5%	1/10W
R039	1-216-025-91	RES,CHIP	100	5%	1/10W
R040	1-216-033-00	RES,CHIP	220	5%	1/10W
R041	1-216-025-91	RES,CHIP	100	5%	1/10W
R042	1-216-295-91	SHORT	0		
R043	1-216-025-91	RES,CHIP	100	5%	1/10W
R044	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R045	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R046	1-216-033-00	RES,CHIP	220	5%	1/10W
R047	1-216-033-00	RES,CHIP	220	5%	1/10W
R048	1-216-073-00	RES,CHIP	10K	5%	1/10W
R051	1-216-049-91	RES,CHIP	1K	5%	1/10W
R052	1-216-049-91	RES,CHIP	1K	5%	1/10W
R053	1-216-049-91	RES,CHIP	1K	5%	1/10W
R054	1-216-033-00	RES,CHIP	220	5%	1/10W
R055	1-216-295-91	SHORT	0		
R056	1-216-295-91	SHORT	0		
R057	1-216-295-91	SHORT	0		
R058	1-216-295-91	SHORT	0		
R059	1-216-033-00	RES,CHIP	220	5%	1/10W
R060	1-216-033-00	RES,CHIP	220	5%	1/10W
R061	1-216-025-91	RES,CHIP	100	5%	1/10W
R062	1-216-049-91	RES,CHIP	1K	5%	1/10W
R063	1-216-025-91	RES,CHIP	100	5%	1/10W
R064	1-216-025-91	RES,CHIP	100	5%	1/10W
R065	1-216-045-00	RES,CHIP	680	5%	1/10W
R066	1-216-049-91	RES,CHIP	1K	5%	1/10W
R067	1-216-073-00	RES,CHIP	10K	5%	1/10W
R068	1-216-073-00	RES,CHIP	10K	5%	1/10W
R069	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R070	1-216-033-00	RES,CHIP	220	5%	1/10W
R071	1-216-025-91	RES,CHIP	100	5%	1/10W
R072	1-216-025-91	RES,CHIP	100	5%	1/10W
R073	1-216-055-00	RES,CHIP	1.8K	5%	1/10W
R074	1-216-055-00	RES,CHIP	1.8K	5%	1/10W
R075	1-216-055-00	RES,CHIP	1.8K	5%	1/10W
R076	1-216-295-91	SHORT	0		
R077	1-216-025-91	RES,CHIP	100	5%	1/10W
R078	1-216-295-91	SHORT	0		
R079	1-216-025-91	RES,CHIP	100	5%	1/10W
R080	1-216-063-91	RES,CHIP	3.9K	5%	1/10W
R081	1-216-025-91	RES,CHIP	100	5%	1/10W
R082	1-216-041-00	RES,CHIP	470	5%	1/10W
R083	1-216-049-91	RES,CHIP	1K	5%	1/10W
R084	1-216-049-91	RES,CHIP	1K	5%	1/10W
R085	1-208-798-11	METAL CHIP	4.7K	0.50%	1/10W
R086	1-216-073-00	RES,CHIP	10K	5%	1/10W
R087	1-216-033-00	RES,CHIP	220	5%	1/10W
R088	1-216-049-91	RES,CHIP	1K	5%	1/10W
R089	1-216-049-91	RES,CHIP	1K	5%	1/10W
R090	1-216-295-91	SHORT	0		
R091	1-216-295-91	SHORT	0		
R092	1-216-033-00	RES,CHIP	220	5%	1/10W
R093	1-216-073-00	RES,CHIP	10K	5%	1/10W
R094	1-216-073-00	RES,CHIP	10K	5%	1/10W
R095	1-216-049-91	RES,CHIP	1K	5%	1/10W
R096	1-216-049-91	RES,CHIP	1K	5%	1/10W
R097	1-216-025-91	RES,CHIP	100	5%	1/10W
R098	1-216-025-91	RES,CHIP	100	5%	1/10W
R099	1-216-025-91	RES,CHIP	100	5%	1/10W
R101	1-216-025-91	RES,CHIP	100	5%	1/10W
R102	1-216-025-91	RES,CHIP	100	5%	1/10W
R105	1-216-295-91	SHORT	0		
R109	1-216-041-00	RES,CHIP	470	5%	1/10W
R110	1-216-043-91	RES,CHIP	560	5%	1/10W
R111	1-216-025-91	RES,CHIP	100	5%	1/10W
R112	1-216-025-91	RES,CHIP	100	5%	1/10W
R116	1-216-025-91	RES,CHIP	100	5%	1/10W
R117	1-216-025-91	RES,CHIP	100	5%	1/10W
R118	1-216-025-91	RES,CHIP	100	5%	1/10W
R301	1-216-113-00	RES,CHIP	470K	5%	1/10W
R302	1-216-089-91	RES,CHIP	47K	5%	1/10W
R303	1-216-089-91	RES,CHIP	47K	5%	1/10W
R1201	1-216-033-00	RES,CHIP	220	5%	1/10W
R1202	1-216-033-00	RES,CHIP	220	5%	1/10W
R1203	1-216-079-00	RES,CHIP	18K	5%	1/10W
R1204	1-216-079-00	RES,CHIP	18K	5%	1/10W
R1205	1-216-089-91	RES,CHIP	47K	5%	1/10W
R1206	1-216-089-91	RES,CHIP	47K	5%	1/10W
R1236	1-208-808-11	METAL CHIP	12K	0.50%	1/10W
R1237	1-216-085-00	RES,CHIP	33K	5%	1/10W
R1238	1-216-081-00	RES,CHIP	22K	5%	1/10W
R1239	1-216-067-00	RES,CHIP	5.6K	5%	1/10W
R1240	1-216-085-00	RES,CHIP	33K	5%	1/10W
R1241	1-216-073-00	RES,CHIP	10K	5%	1/10W
R1242	1-216-073-00	RES,CHIP	10K	5%	1/10W
R1244	1-216-073-00	RES,CHIP	10K	5%	1/10W
R1246	1-208-808-11	METAL CHIP	12K	0.50%	1/10W
R1247	1-216-085-00	RES,CHIP	33K	5%	1/10W
R1248	1-216-075-00	RES,CHIP	12K	5%	1/10W
R1249	1-216-025-91	RES,CHIP	100	5%	1/10W
R1250	1-216-063-91	RES,CHIP	3.9K	5%	1/10W
R1252	1-216-073-00	RES,CHIP	10K	5%	1/10W
R1253	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R1254	1-216-075-00	RES,CHIP	12K	5%	1/10W
R1255	1-216-075-00	RES,CHIP	12K	5%	1/10W
R1256	1-216-073-00	RES,CHIP	10K	5%	1/10W
R1257	1-216-025-91	RES,CHIP	100	5%	1/10W
R1258	1-216-075-00	RES,CHIP	12K	5%	1/10W
R1259	1-216-073-00	RES,CHIP	10K	5%	1/10W
R1260	1-216-029-00	RES,CHIP	150	5%	1/10W
R1261	1-216-029-00	RES,CHIP	150	5%	1/10W
R1264	1-216-041-00	RES,CHIP	470	5%	1/10W
R1265	1-216-041-00	RES,CHIP	470	5%	1/10W

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REF. NO.	PART NO.	DESCRIPTION			REMARK
R1266	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1267	1-216-077-91	RES,CHIP	15K	5%	1/10W
R1269	1-216-025-91	RES,CHIP	100	5%	1/10W
R1270	1-216-089-91	RES,CHIP	47K	5%	1/10W
R1271	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1272	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1273	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R1275	1-216-081-00	RES,CHIP	22K	5%	1/10W
R1276	1-216-081-00	RES,CHIP	22K	5%	1/10W
R1277	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R1278	1-125-838-91	CERAMIC CHIP	2.2MF	10%	6.3V
R1279	1-125-838-91	CERAMIC CHIP	2.2MF	10%	6.3V
R1280	1-216-029-00	RES,CHIP	150	5%	1/10W
R1281	1-216-029-00	RES,CHIP	150	5%	1/10W
R1283	1-216-295-91	SHORT	0		
R1284	1-216-295-91	SHORT	0		
R1286	1-216-073-00	RES,CHIP	10K	5%	1/10W
R2200	1-216-021-00	RES,CHIP	68	5%	1/10W
R2201	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R2202	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R2203	1-216-021-00	RES,CHIP	68	5%	1/10W
R2204	1-216-073-00	RES,CHIP	10K	5%	1/10W
R2205	1-216-097-91	RES,CHIP	100K	5%	1/10W
R2206	1-216-117-00	RES,CHIP	680K	5%	1/10W
R2207	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R2208	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R2209	1-216-117-00	RES,CHIP	680K	5%	1/10W
R2210	1-216-089-91	RES,CHIP	47K	5%	1/10W
R2211	1-216-097-91	RES,CHIP	100K	5%	1/10W
R2212	1-216-073-00	RES,CHIP	10K	5%	1/10W
R2213	1-216-089-91	RES,CHIP	47K	5%	1/10W
R2214	1-216-089-91	RES,CHIP	47K	5%	1/10W
R2215	1-216-089-91	RES,CHIP	47K	5%	1/10W
R2600	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R2601	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W
R2602	1-208-781-11	METAL CHIP	910	0.50%	1/10W
R2603	1-208-790-11	METAL CHIP	2.2K	0.50%	1/10W
R2604	1-208-790-11	METAL CHIP	2.2K	0.50%	1/10W
R3300	1-216-043-91	RES,CHIP	560	5%	1/10W
R3320	1-216-073-00	RES,CHIP	10K	5%	1/10W
R3323	1-216-025-91	RES,CHIP	100	5%	1/10W
R3334	1-216-025-91	RES,CHIP	100	5%	1/10W
R3362	1-216-025-91	RES,CHIP	100	5%	1/10W
R3374	1-216-295-91	SHORT	0		
		<VARIABLE RESISTOR>			
RV3300	1-238-597-11	RES, ADJ, CARBON 1K			
		<TUNER>			
TU101	8-598-450-10	TUNER, FSS BTF-LG434 (EXCEPT KV-ES29M90)			
TU101	8-598-452-30	TUNER, FSS BTF-WG442 (KV-ES29M90)			
TU3301	8-598-508-10	TUNER, FSS BTF-LG436			

REF. NO.	PART NO.	DESCRIPTION			REMARK
		<CRYSTAL>			
X001	1-567-928-11	VIBLATOR, CERAMIC			

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<CAPACITOR>

C8103	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8104	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8105	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8106	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8107	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8108	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8109	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8110	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8111	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8112	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C8116	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C8117	1-126-382-11	ELECT	100MF	20%	16V
C8118	1-127-532-11	ELECT	47MF	20%	6.3V
C8119	1-126-795-11	ELECT	10MF	20%	25V
C8120	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8121	1-125-838-91	CERAMIC CHIP	2.2MF	10%	6.3V
C8122	1-125-838-91	CERAMIC CHIP	2.2MF	10%	6.3V
C8123	1-127-532-11	ELECT	47MF	20%	6.3V
C8124	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8125	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8126	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8127	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C8128	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C8129	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8130	1-126-382-11	ELECT	100MF	20%	16V
C8131	1-126-382-11	ELECT	100MF	20%	16V
C8132	1-125-838-91	CERAMIC CHIP	2.2MF	10%	6.3V
C8133	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8134	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8135	1-126-382-11	ELECT	100MF	20%	16V
C8136	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C8137	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C8138	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C8139	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C8140	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C8141	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C8142	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C8143	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8144	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C8145	1-163-233-11	CERAMIC CHIP	18PF	5%	50V
C8146	1-107-823-11	CERAMIC CHIP	0.47MF	10%	16V
C8147	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8150	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8155	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8161	1-126-382-11	ELECT	100MF	20%	16V

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REF. NO.	PART NO.	DESCRIPTION			REMARK
C8162	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C8163	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8166	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C8167	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8168	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8197	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8198	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8199	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8200	1-216-295-91	SHORT	0		
C8201	1-216-295-91	SHORT	0		
C8202	1-107-823-11	CERAMIC CHIP	0.47MF	10%	16V
C8203	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8204	1-107-823-11	CERAMIC CHIP	0.47MF	10%	16V
C8205	1-163-253-11	CERAMIC CHIP	120PF	5%	50V
C8206	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C8207	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C8208	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C8209	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C8210	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C8211	1-115-340-11	CERAMIC CHIP	0.22MF	10%	25V
C8212	1-125-838-91	CERAMIC CHIP	2.2MF	10%	6.3V
C8213	1-125-838-91	CERAMIC CHIP	2.2MF	10%	6.3V
C8218	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
		<CONNECTOR>			
CN8100	1-793-867-11	PIN, CONNECTOR (PC BORAD) 10P			
CN8101	1-793-867-11	PIN, CONNECTOR (PC BORAD) 10P			
		<FERRITE BEAD>			
FB8100	1-216-295-91	SHORT	0		
FB8101	1-216-295-91	SHORT	0		
FB8102	1-216-295-91	SHORT	0		
FB8103	1-216-295-91	SHORT	0		
FB8104	1-414-598-11	INDUCTOR CHIP	0UH		
FB8105	1-216-295-91	SHORT	0		
FB8106	1-414-598-11	INDUCTOR CHIP	0UH		
FB8108	1-414-598-11	INDUCTOR CHIP	0UH		
FB8109	1-414-598-11	INDUCTOR CHIP	0UH		
FB8110	1-414-598-11	INDUCTOR CHIP	0UH		
FB8111	1-414-598-11	INDUCTOR CHIP	0UH		
FB8112	1-414-598-11	INDUCTOR CHIP	0UH		
FB8113	1-414-598-11	INDUCTOR CHIP	0UH		
FB8114	1-414-598-11	INDUCTOR CHIP	0UH		
FB8115	1-414-598-11	INDUCTOR CHIP	0UH		
FB8116	1-414-598-11	INDUCTOR CHIP	0UH		
FB8117	1-414-598-11	INDUCTOR CHIP	0UH		
FB8118	1-414-598-11	INDUCTOR CHIP	0UH		
FB8119	1-414-598-11	INDUCTOR CHIP	0UH		
FB8120	1-414-598-11	INDUCTOR CHIP	0UH		
FB8121	1-414-598-11	INDUCTOR CHIP	0UH		

REF. NO.	PART NO.	DESCRIPTION			REMARK
		<FILTER>			
FL8100	1-234-177-21	FILTER, CHIP EMI			
FL8101	1-234-177-21	FILTER, CHIP EMI			
FL8102	1-234-177-21	FILTER, CHIP EMI			
		<IC>			
IC8102	8-759-576-72	IC LF50CDT-TR			
IC8103	8-759-579-68	IC AK4524			
IC8104	8-759-542-87	IC S-80827ANUP-EDQ-T2			
IC8105	8-759-651-20	IC TC9446F-002			
IC8106	8-759-242-70	IC TC7WU04F			
IC8107	8-759-459-69	IC S-80743AN-D7			
		<CHIP CONDUCTOR>			
JR8102	1-216-295-91	SHORT	0		
JR8103	1-216-295-91	SHORT	0		
		<COIL>			
L8100	1-412-026-11	INDUCTOR CHIP	1UH		
L8101	1-412-026-11	INDUCTOR CHIP	1UH		
L8102	1-412-026-11	INDUCTOR CHIP	1UH		
L8103	1-412-026-11	INDUCTOR CHIP	1UH		
L8104	1-412-026-11	INDUCTOR CHIP	1UH		
L8105	1-412-026-11	INDUCTOR CHIP	1UH		
		<RESISTOR>			
R8101	1-216-022-00	RES,CHIP	75	5%	1/10W
R8102	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R8103	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R8106	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R8107	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R8120	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8121	1-216-025-91	RES,CHIP	100	5%	1/10W
R8122	1-216-025-91	RES,CHIP	100	5%	1/10W
R8123	1-216-009-91	RES,CHIP	22	5%	1/10W
R8124	1-216-009-91	RES,CHIP	22	5%	1/10W
R8125	1-216-009-91	RES,CHIP	22	5%	1/10W
R8126	1-216-009-91	RES,CHIP	22	5%	1/10W
R8127	1-216-025-91	RES,CHIP	100	5%	1/10W
R8128	1-216-025-91	RES,CHIP	100	5%	1/10W
R8129	1-216-009-91	RES,CHIP	22	5%	1/10W
R8131	1-216-295-91	SHORT	0		
R8133	1-216-129-00	RES,CHIP	2.2M	5%	1/10W
R8134	1-216-295-91	SHORT	0		
R8135	1-216-295-91	SHORT	0		
R8137	1-216-295-91	SHORT	0		
R8138	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8139	1-216-037-00	RES,CHIP	330	5%	1/10W
R8140	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8141	1-216-295-91	SHORT	0		
R8143	1-216-295-91	SHORT	0		

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REF. NO.	PART NO.	DESCRIPTION			REMARK
R8144	1-216-025-91	RES,CHIP	100	5%	1/10W
R8145	1-216-033-00	RES,CHIP	220	5%	1/10W
R8146	1-216-033-00	RES,CHIP	220	5%	1/10W
R8147	1-216-295-91	SHORT	0		
R8148	1-216-295-91	SHORT	0		
R8149	1-216-037-00	RES,CHIP	330	5%	1/10W
R8155	1-216-295-91	SHORT	0		
R8157	1-216-037-00	RES,CHIP	330	5%	1/10W
R8158	1-216-037-00	RES,CHIP	330	5%	1/10W
R8161	1-216-025-91	RES,CHIP	100	5%	1/10W
R8168	1-216-025-91	RES,CHIP	100	5%	1/10W
R8169	1-216-097-91	RES,CHIP	100K	5%	1/10W
R8170	1-216-121-91	RES,CHIP	1M	5%	1/10W
R8171	1-216-025-91	RES,CHIP	100	5%	1/10W
R8172	1-216-025-91	RES,CHIP	100	5%	1/10W
R8173	1-216-025-91	RES,CHIP	100	5%	1/10W
R8200	1-216-073-00	RES,CHIP	10K	5%	1/10W
R8201	1-216-025-91	RES,CHIP	100	5%	1/10W
R8202	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R8203	1-208-782-11	METAL CHIP	1K	0.50%	1/10W
R8204	1-216-073-00	RES,CHIP	10K	5%	1/10W
R8205	1-208-782-11	METAL CHIP	1K	0.50%	1/10W
R8206	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8207	1-216-091-00	RES,CHIP	56K	5%	1/10W
		<CRYSTAL>			
X8102	1-781-041-11	VIBRATOR, CRYSTAL			

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<CAPACITOR>

C302	1-117-136-11	ELECT CHIP	10MF	20%	6.3V
C305	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C306	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C309	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C310	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C312	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C313	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C314	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C315	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C316	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C317	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C318	1-124-779-00	ELECT CHIP	10MF	20%	16V
C319	1-126-394-11	ELECT CHIP	10MF	20%	16V
C320	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C321	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C323	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C324	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C325	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C327	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C330	1-163-038-91	CERAMIC CHIP	0.1MF		25V

REF. NO.	PART NO.	DESCRIPTION			REMARK
C331	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C332	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C333	1-216-295-91	SHORT	0		
C337	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C338	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C339	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C340	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C341	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C346	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C347	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C349	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C350	1-126-396-11	ELECT CHIP	47MF	20%	16V
C353	1-126-204-11	ELECT CHIP	47MF	20%	16V
C354	1-117-136-11	ELECT CHIP	10MF	20%	6.3V
C355	1-117-136-11	ELECT CHIP	10MF	20%	6.3V
C361	1-124-779-00	ELECT CHIP	10MF	20%	16V
C362	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C363	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C501	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C502	1-124-779-00	ELECT CHIP	10MF	20%	16V
C503	1-124-779-00	ELECT CHIP	10MF	20%	16V
C505	1-124-779-00	ELECT CHIP	10MF	20%	16V
C507	1-124-779-00	ELECT CHIP	10MF	20%	16V
C509	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C510	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C511	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C512	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C514	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C515	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C516	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C517	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C518	1-126-204-11	ELECT CHIP	47MF	20%	16V
C519	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C520	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C521	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C522	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C523	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C524	1-124-779-00	ELECT CHIP	10MF	20%	16V
C525	1-126-394-11	ELECT CHIP	10MF	20%	16V
C526	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C527	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C528	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C530	1-216-295-91	SHORT	0		
C532	1-216-295-91	SHORT	0		
C534	1-216-295-91	SHORT	0		
C535	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C536	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C537	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C538	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C539	1-126-204-11	ELECT CHIP	47MF	20%	16V
C540	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C542	1-126-204-11	ELECT CHIP	47MF	20%	16V
C543	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C545	1-126-396-11	ELECT CHIP	47MF	20%	16V
C546	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C548	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C549	1-126-204-11	ELECT CHIP	47MF	20%	16V

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REF. NO.	PART NO.	DESCRIPTION			REMARK
C550	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C551	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C554	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C555	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C556	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C557	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C559	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C560	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C601	1-126-394-11	ELECT CHIP	10MF	20%	16V
C602	1-126-394-11	ELECT CHIP	10MF	20%	16V
C603	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C604	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C605	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C606	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C607	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C608	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C609	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C610	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C611	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C612	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C613	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C614	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C615	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C616	1-126-396-11	ELECT CHIP	47MF	20%	16V
C617	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C618	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C619	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C620	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C621	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C622	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C623	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C624	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C625	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C626	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C627	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C628	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C629	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C630	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C631	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C632	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C633	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C634	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C635	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C636	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C637	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C638	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C639	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C640	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C642	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C643	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C644	1-126-398-11	ELECT CHIP	4.7MF	20%	35V
C645	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C801	1-124-779-00	ELECT CHIP	10MF	20%	16V
C802	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C803	1-124-779-00	ELECT CHIP	10MF	20%	16V
C804	1-124-779-00	ELECT CHIP	10MF	20%	16V
C806	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C807	1-124-779-00	ELECT CHIP	10MF	20%	16V
C808	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C809	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C810	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C811	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C812	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C813	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C814	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C815	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C816	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C817	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C818	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C819	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C820	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C821	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C822	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C823	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C824	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C825	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C826	1-164-489-11	CERAMIC CHIP	0.22MF	10%	16V
C827	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C829	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C834	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C835	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C837	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C839	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C840	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C841	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C842	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C843	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C844	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C848	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C849	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C850	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C851	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C852	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C853	1-164-182-11	CERAMIC CHIP	0.0033MF	10%	50V
C854	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C901	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C902	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C903	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C904	1-124-779-00	ELECT CHIP	10MF	20%	16V
C905	1-109-982-11	CERAMIC CHIP	1MF	10%	10V
C906	1-124-779-00	ELECT CHIP	10MF	20%	16V
C907	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C908	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C909	1-126-396-11	ELECT CHIP	47MF	20%	16V
C910	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C913	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C914	1-126-394-11	ELECT CHIP	10MF	20%	16V
C950	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C954	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
		<CONNECTOR>			
CN502	1-695-302-11	CONNECTOR, BOARD TO BOARD 50P			

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

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REF. NO.	PART NO.	DESCRIPTION	REMARK
		<DIODE>	
D301	8-719-041-97	DIODE MA113-(TX)	
D302	8-719-041-97	DIODE MA113-(TX)	
D501	8-719-422-12	DIODE MA8039	
D601	8-719-073-01	DIODE MA111-(K8).S0	
		<FERRITE BEAD>	
FB501	1-414-813-11	FERRITE 0UH	
FB502	1-414-813-11	FERRITE 0UH	
FB503	1-414-813-11	FERRITE 0UH	
FB504	1-414-813-11	FERRITE 0UH	
FB601	1-414-553-11	FERRITE 0UH	
FB801	1-414-553-11	FERRITE 0UH	
FB802	1-414-553-11	FERRITE 0UH	
		<FILTER>	
FL304	1-234-177-21	FILTER, CHIP EMI	
FL305	1-234-177-21	FILTER, CHIP EMI	
FL306	1-239-558-11	FILTER, CHIP EMI	
FL501	1-233-877-11	FILTER, LOW PASS	
FL502	1-233-504-21	FILTER, LOW PASS	
FL503	1-233-504-21	FILTER, LOW PASS	
FL504	1-234-177-21	FILTER, CHIP EMI	
FL505	1-234-177-21	FILTER, CHIP EMI	
FL506	1-234-177-21	FILTER, CHIP EMI	
FL508	1-234-177-21	FILTER, CHIP EMI	
FL509	1-234-177-21	FILTER, CHIP EMI	
FL510	1-234-177-21	FILTER, CHIP EMI	
FL511	1-234-177-21	FILTER, CHIP EMI	
FL512	1-234-177-21	FILTER, CHIP EMI	
FL601	1-234-177-21	FILTER, CHIP EMI	
FL602	1-234-177-21	FILTER, CHIP EMI	
FL603	1-234-177-21	FILTER, CHIP EMI	
FL606	1-239-560-11	FILTER, CHIP EMI	
FL801	1-234-177-21	FILTER, CHIP EMI	
FL802	1-234-177-21	FILTER, CHIP EMI	
FL803	1-234-177-21	FILTER, CHIP EMI	
FL804	1-234-177-21	FILTER, CHIP EMI	
FL805	1-234-177-21	FILTER, CHIP EMI	
FL806	1-234-177-21	FILTER, CHIP EMI	
FL807	1-234-177-21	FILTER, CHIP EMI	
FL808	1-234-177-21	FILTER, CHIP EMI	
FL810	1-234-177-21	FILTER, CHIP EMI	
FL901	1-233-878-11	FILTER, LOW PASS	
FL902	1-233-876-11	FILTER, LOW PASS	
FL903	1-233-876-11	FILTER, LOW PASS	
FL904	1-234-177-21	FILTER, CHIP EMI	
FL905	1-234-177-21	FILTER, CHIP EMI	
FL906	1-234-177-21	FILTER, CHIP EMI	
FL907	1-234-177-21	FILTER, CHIP EMI	
		<IC>	
IC302	8-752-388-98	IC CXD2303AQ	
IC303	8-752-088-27	IC CXA3266Q-T6	
IC309	8-759-640-16	IC TC7SET04F(TE85R)	
IC311	8-759-708-05	IC NJM78L05A	
IC501	8-759-447-90	IC TLC5733AIPM	
IC504	8-759-430-32	IC TLC2933IPWR	
IC505	8-759-640-16	IC TC7SET04F(TE85R)	
IC506	8-759-640-16	IC TC7SET04F(TE85R)	
IC601	8-752-398-47	IC CXD2090Q	
IC602	8-759-567-37	IC MB81F161622B-80FN	
IC603	⚠ 8-759-295-09	IC TLC2932IPW	
IC604	8-752-072-94	IC CXA1875AM-T4	
IC801	8-759-592-40	IC CXD9509Q	
IC802	8-759-595-53	IC MB81F643242B-10FN	
IC803	8-759-460-29	IC PST9120NL	
IC901	8-752-367-59	IC CXD2309Q	
IC902	8-759-648-21	IC MB94918-APF-G-121-BND	
IC903	8-759-527-75	IC M24C04-MN6T	
IC904	8-759-349-11	IC PST9145NL	
		<COIL>	
L302	1-412-029-11	INDUCTOR CHIP 10UH	
L303	1-412-029-11	INDUCTOR CHIP 10UH	
L501	1-412-026-11	INDUCTOR CHIP 1UH	
L502	1-412-026-11	INDUCTOR CHIP 1UH	
L503	1-412-026-11	INDUCTOR CHIP 1UH	
L504	1-412-026-11	INDUCTOR CHIP 1UH	
L505	1-412-029-11	INDUCTOR CHIP 10UH	
L506	1-412-026-11	INDUCTOR CHIP 1UH	
L508	1-412-029-11	INDUCTOR CHIP 10UH	
L509	1-412-029-11	INDUCTOR CHIP 10UH	
L511	1-412-026-11	INDUCTOR CHIP 1UH	
L512	1-412-026-11	INDUCTOR CHIP 1UH	
L604	1-412-029-11	INDUCTOR CHIP 10UH	
L605	1-412-029-11	INDUCTOR CHIP 10UH	
		<TRANSISTOR>	
Q501	8-729-216-22	TRANSISTOR 2SA1162-G	
Q502	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q503	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q510	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q511	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q512	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q513	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q514	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q515	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q516	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q517	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q518	8-729-026-50	TRANSISTOR 2SA1037AK-T146-QR	
Q519	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q520	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q521	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q522	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q523	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q524	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q601	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q602	8-729-120-28	TRANSISTOR 2SC1623-L5L6	

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REF. NO.	PART NO.	DESCRIPTION			REMARK
Q901	8-729-026-50	TRANSISTOR 2SA1037AK-T146-QR			
Q902	8-729-216-22	TRANSISTOR 2SA1162-G			
Q903	8-729-216-22	TRANSISTOR 2SA1162-G			
Q904	8-729-028-28	TRANSISTOR 2SK2036(TE85L)			
Q905	8-729-028-28	TRANSISTOR 2SK2036(TE85L)			
Q906	1-801-806-11	TRANSISTOR DTC144EKA-T146			
Q907	8-729-216-22	TRANSISTOR 2SA1162-G			
Q908	8-729-216-22	TRANSISTOR 2SA1162-G			
Q909	8-729-216-22	TRANSISTOR 2SA1162-G			
		<RESISTOR>			
R302	1-216-013-00	RES,CHIP	33	5%	1/10W
R303	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R305	1-216-049-91	RES,CHIP	1K	5%	1/10W
R306	1-216-658-11	METAL CHIP	2K	0.50%	1/10W
R309	1-216-009-91	RES,CHIP	22	5%	1/10W
R310	1-216-009-91	RES,CHIP	22	5%	1/10W
R311	1-216-009-91	RES,CHIP	22	5%	1/10W
R313	1-216-009-91	RES,CHIP	22	5%	1/10W
R316	1-216-009-91	RES,CHIP	22	5%	1/10W
R318	1-216-009-91	RES,CHIP	22	5%	1/10W
R319	1-216-049-91	RES,CHIP	1K	5%	1/10W
R321	1-216-009-91	RES,CHIP	22	5%	1/10W
R323	1-216-009-91	RES,CHIP	22	5%	1/10W
R324	1-216-009-91	RES,CHIP	22	5%	1/10W
R325	1-216-073-00	RES,CHIP	10K	5%	1/10W
R328	1-216-025-91	RES,CHIP	100	5%	1/10W
R333	1-216-295-91	SHORT	0		
R335	1-216-013-00	RES,CHIP	33	5%	1/10W
R336	1-216-013-00	RES,CHIP	33	5%	1/10W
R337	1-216-097-91	RES,CHIP	100K	5%	1/10W
R338	1-216-295-91	SHORT	0		
R339	1-216-295-91	SHORT	0		
R343	1-216-295-91	SHORT	0		
R347	1-216-295-91	SHORT	0		
R350	1-216-295-91	SHORT	0		
R501	1-216-025-91	RES,CHIP	100	5%	1/10W
R502	1-216-025-91	RES,CHIP	100	5%	1/10W
R503	1-216-295-91	SHORT	0		
R504	1-216-295-91	SHORT	0		
R505	1-216-295-91	SHORT	0		
R506	1-216-025-91	RES,CHIP	100	5%	1/10W
R507	1-216-025-91	RES,CHIP	100	5%	1/10W
R508	1-216-025-91	RES,CHIP	100	5%	1/10W
R509	1-216-025-91	RES,CHIP	100	5%	1/10W
R510	1-216-043-91	RES,CHIP	560	5%	1/10W
R511	1-216-043-91	RES,CHIP	560	5%	1/10W
R512	1-216-043-91	RES,CHIP	560	5%	1/10W
R513	1-216-043-91	RES,CHIP	560	5%	1/10W
R514	1-216-043-91	RES,CHIP	560	5%	1/10W
R515	1-216-043-91	RES,CHIP	560	5%	1/10W
R516	1-216-049-91	RES,CHIP	1K	5%	1/10W
R517	1-216-049-91	RES,CHIP	1K	5%	1/10W
R518	1-216-295-91	SHORT	0		
R520	1-216-645-11	METAL CHIP	560	0.50%	1/10W
R521	1-216-295-91	SHORT	0		

REF. NO.	PART NO.	DESCRIPTION			REMARK
R523	1-216-645-11	METAL CHIP	560	0.50%	1/10W
R524	1-216-295-91	SHORT	0		
R526	1-216-645-11	METAL CHIP	560	0.50%	1/10W
R528	1-216-037-00	RES,CHIP	330	5%	1/10W
R529	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W
R530	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W
R531	1-216-031-00	RES,CHIP	180	5%	1/10W
R532	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W
R533	1-216-031-00	RES,CHIP	180	5%	1/10W
R536	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R537	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R540	1-216-049-91	RES,CHIP	1K	5%	1/10W
R548	1-216-619-11	METAL CHIP	47	0.50%	1/10W
R549	1-216-619-11	METAL CHIP	47	0.50%	1/10W
R550	1-216-625-11	METAL CHIP	82	0.50%	1/10W
R551	1-216-625-11	METAL CHIP	82	0.50%	1/10W
R552	1-216-619-11	METAL CHIP	47	0.50%	1/10W
R553	1-216-295-91	SHORT	0		
R554	1-216-619-11	METAL CHIP	47	0.50%	1/10W
R555	1-216-077-91	RES,CHIP	15K	5%	1/10W
R557	1-216-049-91	RES,CHIP	1K	5%	1/10W
R558	1-216-025-91	RES,CHIP	100	5%	1/10W
R559	1-216-077-91	RES,CHIP	15K	5%	1/10W
R560	1-216-619-11	METAL CHIP	47	0.50%	1/10W
R561	1-216-043-91	RES,CHIP	560	5%	1/10W
R562	1-216-043-91	RES,CHIP	560	5%	1/10W
R563	1-216-043-91	RES,CHIP	560	5%	1/10W
R571	1-216-295-91	SHORT	0		
R572	1-216-619-11	METAL CHIP	47	0.50%	1/10W
R573	1-216-679-11	METAL CHIP	15K	0.50%	1/10W
R574	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R575	1-216-625-11	METAL CHIP	82	0.50%	1/10W
R576	1-216-625-11	METAL CHIP	82	0.50%	1/10W
R577	1-216-619-11	METAL CHIP	47	0.50%	1/10W
R578	1-216-619-11	METAL CHIP	47	0.50%	1/10W
R579	1-216-077-91	RES,CHIP	15K	5%	1/10W
R580	1-216-295-91	SHORT	0		
R582	1-216-041-00	RES,CHIP	470	5%	1/10W
R584	1-216-041-00	RES,CHIP	470	5%	1/10W
R586	1-216-049-91	RES,CHIP	1K	5%	1/10W
R587	1-216-049-91	RES,CHIP	1K	5%	1/10W
R589	1-216-049-91	RES,CHIP	1K	5%	1/10W
R590	1-216-049-91	RES,CHIP	1K	5%	1/10W
R591	1-216-049-91	RES,CHIP	1K	5%	1/10W
R592	1-216-049-91	RES,CHIP	1K	5%	1/10W
R594	1-216-041-00	RES,CHIP	470	5%	1/10W
R596	1-216-049-91	RES,CHIP	1K	5%	1/10W
R597	1-216-073-00	RES,CHIP	10K	5%	1/10W
R598	1-216-025-91	RES,CHIP	100	5%	1/10W
R600	1-216-066-00	RES,CHIP	5.1K	5%	1/10W
R601	1-216-073-00	RES,CHIP	10K	5%	1/10W
R602	1-216-073-00	RES,CHIP	10K	5%	1/10W
R603	1-216-073-00	RES,CHIP	10K	5%	1/10W
R604	1-216-033-00	RES,CHIP	220	5%	1/10W
R605	1-216-295-91	SHORT	0		
R608	1-216-295-91	SHORT	0		
R609	1-216-073-00	RES,CHIP	10K	5%	1/10W

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REF. NO.	PART NO.	DESCRIPTION			REMARK
R610	1-216-033-00	RES,CHIP	220	5%	1/10W
R611	1-216-073-00	RES,CHIP	10K	5%	1/10W
R612	1-216-073-00	RES,CHIP	10K	5%	1/10W
R613	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R615	1-216-089-91	RES,CHIP	47K	5%	1/10W
R616	1-216-073-00	RES,CHIP	10K	5%	1/10W
R617	1-216-295-91	SHORT	0		
R619	1-216-073-00	RES,CHIP	10K	5%	1/10W
R621	1-216-295-91	SHORT	0		
R622	1-216-295-91	SHORT	0		
R623	1-216-295-91	SHORT	0		
R624	1-216-295-91	SHORT	0		
R625	1-216-295-91	SHORT	0		
R626	1-216-073-00	RES,CHIP	10K	5%	1/10W
R628	1-216-295-91	SHORT	0		
R629	1-216-073-00	RES,CHIP	10K	5%	1/10W
R631	1-216-295-91	SHORT	0		
R634	1-216-295-91	SHORT	0		
R635	1-216-295-91	SHORT	0		
R638	1-216-295-91	SHORT	0		
R639	1-216-017-91	RES,CHIP	47	5%	1/10W
R640	1-216-009-91	RES,CHIP	22	5%	1/10W
R642	1-216-295-91	SHORT	0		
R643	1-216-295-91	SHORT	0		
R645	1-216-295-91	SHORT	0		
R651	1-216-295-91	SHORT	0		
R653	1-216-025-91	RES,CHIP	100	5%	1/10W
R654	1-216-033-00	RES,CHIP	220	5%	1/10W
R655	1-216-295-91	SHORT	0		
R657	1-216-009-91	RES,CHIP	22	5%	1/10W
R658	1-216-049-91	RES,CHIP	1K	5%	1/10W
R659	1-216-025-91	RES,CHIP	100	5%	1/10W
R660	1-216-025-91	RES,CHIP	100	5%	1/10W
R661	1-216-025-91	RES,CHIP	100	5%	1/10W
R664	1-216-009-91	RES,CHIP	22	5%	1/10W
R665	1-216-035-00	RES,CHIP	270	5%	1/10W
R666	1-216-646-11	METAL CHIP	620	0.50%	1/10W
R667	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W
R668	1-216-009-91	RES,CHIP	22	5%	1/10W
R670	1-216-295-91	SHORT	0		
R671	1-216-073-00	RES,CHIP	10K	5%	1/10W
R672	1-216-073-00	RES,CHIP	10K	5%	1/10W
R673	1-216-073-00	RES,CHIP	10K	5%	1/10W
R674	1-216-073-00	RES,CHIP	10K	5%	1/10W
R675	1-216-073-00	RES,CHIP	10K	5%	1/10W
R676	1-216-073-00	RES,CHIP	10K	5%	1/10W
R677	1-216-073-00	RES,CHIP	10K	5%	1/10W
R678	1-216-073-00	RES,CHIP	10K	5%	1/10W
R679	1-216-073-00	RES,CHIP	10K	5%	1/10W
R680	1-216-073-00	RES,CHIP	10K	5%	1/10W
R681	1-216-073-00	RES,CHIP	10K	5%	1/10W
R682	1-216-073-00	RES,CHIP	10K	5%	1/10W
R683	1-216-073-00	RES,CHIP	10K	5%	1/10W
R684	1-216-073-00	RES,CHIP	10K	5%	1/10W
R685	1-216-073-00	RES,CHIP	10K	5%	1/10W
R686	1-216-073-00	RES,CHIP	10K	5%	1/10W
R687	1-216-295-91	SHORT	0		
R688	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R689	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R690	1-216-295-91	SHORT	0		
R691	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R692	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R693	1-216-009-91	RES,CHIP	22	5%	1/10W
R694	1-216-295-91	SHORT	0		
R695	1-216-047-91	RES,CHIP	820	5%	1/10W
R696	1-216-049-91	RES,CHIP	1K	5%	1/10W
R697	1-216-117-00	RES,CHIP	680K	5%	1/10W
R698	1-216-117-00	RES,CHIP	680K	5%	1/10W
R699	1-216-295-91	SHORT	0		
R801	1-216-009-91	RES,CHIP	22	5%	1/10W
R802	1-216-009-91	RES,CHIP	22	5%	1/10W
R804	1-216-073-00	RES,CHIP	10K	5%	1/10W
R806	1-216-675-91	METAL CHIP	10K	0.50%	1/10W
R807	1-216-637-11	METAL CHIP	270	0.50%	1/10W
R812	1-216-073-00	RES,CHIP	10K	5%	1/10W
R813	1-216-295-91	SHORT	0		
R814	1-216-073-00	RES,CHIP	10K	5%	1/10W
R815	1-216-073-00	RES,CHIP	10K	5%	1/10W
R816	1-216-073-00	RES,CHIP	10K	5%	1/10W
R817	1-216-613-11	METAL CHIP	27	0.50%	1/10W
R818	1-216-295-91	SHORT	0		
R820	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R822	1-216-295-91	SHORT	0		
R823	1-216-073-00	RES,CHIP	10K	5%	1/10W
R824	1-216-073-00	RES,CHIP	10K	5%	1/10W
R825	1-216-621-11	METAL CHIP	56	0.50%	1/10W
R826	1-216-641-11	METAL CHIP	390	0.50%	1/10W
R827	1-216-607-11	METAL CHIP	15	0.50%	1/10W
R834	1-216-629-11	METAL CHIP	120	0.50%	1/10W
R835	1-216-623-11	METAL CHIP	68	0.50%	1/10W
R836	1-216-611-11	METAL CHIP	22	0.50%	1/10W
R840	1-216-295-91	SHORT	0		
R844	1-216-009-91	RES,CHIP	22	5%	1/10W
R845	1-216-009-91	RES,CHIP	22	5%	1/10W
R846	1-216-009-91	RES,CHIP	22	5%	1/10W
R847	1-216-009-91	RES,CHIP	22	5%	1/10W
R848	1-216-009-91	RES,CHIP	22	5%	1/10W
R849	1-216-009-91	RES,CHIP	22	5%	1/10W
R850	1-216-009-91	RES,CHIP	22	5%	1/10W
R851	1-216-009-91	RES,CHIP	22	5%	1/10W
R852	1-216-009-91	RES,CHIP	22	5%	1/10W
R853	1-216-009-91	RES,CHIP	22	5%	1/10W
R854	1-216-009-91	RES,CHIP	22	5%	1/10W
R855	1-216-009-91	RES,CHIP	22	5%	1/10W
R856	1-216-009-91	RES,CHIP	22	5%	1/10W
R857	1-216-009-91	RES,CHIP	22	5%	1/10W
R858	1-216-009-91	RES,CHIP	22	5%	1/10W
R859	1-216-009-91	RES,CHIP	22	5%	1/10W
R860	1-216-009-91	RES,CHIP	22	5%	1/10W
R861	1-216-009-91	RES,CHIP	22	5%	1/10W
R862	1-216-009-91	RES,CHIP	22	5%	1/10W
R863	1-216-009-91	RES,CHIP	22	5%	1/10W
R864	1-216-009-91	RES,CHIP	22	5%	1/10W
R865	1-216-009-91	RES,CHIP	22	5%	1/10W
R866	1-216-009-91	RES,CHIP	22	5%	1/10W
R867	1-216-009-91	RES,CHIP	22	5%	1/10W

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REF. NO.	PART NO.	DESCRIPTION			REMARK
R868	1-216-009-91	RES,CHIP	22	5%	1/10W
R869	1-216-009-91	RES,CHIP	22	5%	1/10W
R870	1-216-009-91	RES,CHIP	22	5%	1/10W
R871	1-216-009-91	RES,CHIP	22	5%	1/10W
R872	1-216-009-91	RES,CHIP	22	5%	1/10W
R873	1-216-009-91	RES,CHIP	22	5%	1/10W
R874	1-216-009-91	RES,CHIP	22	5%	1/10W
R875	1-216-009-91	RES,CHIP	22	5%	1/10W
R876	1-216-009-91	RES,CHIP	22	5%	1/10W
R877	1-216-009-91	RES,CHIP	22	5%	1/10W
R878	1-216-009-91	RES,CHIP	22	5%	1/10W
R879	1-216-009-91	RES,CHIP	22	5%	1/10W
R880	1-216-009-91	RES,CHIP	22	5%	1/10W
R881	1-216-009-91	RES,CHIP	22	5%	1/10W
R882	1-216-009-91	RES,CHIP	22	5%	1/10W
R883	1-216-009-91	RES,CHIP	22	5%	1/10W
R884	1-216-009-91	RES,CHIP	22	5%	1/10W
R885	1-216-009-91	RES,CHIP	22	5%	1/10W
R886	1-216-009-91	RES,CHIP	22	5%	1/10W
R887	1-216-009-91	RES,CHIP	22	5%	1/10W
R888	1-216-009-91	RES,CHIP	22	5%	1/10W
R889	1-216-009-91	RES,CHIP	22	5%	1/10W
R890	1-216-009-91	RES,CHIP	22	5%	1/10W
R891	1-216-009-91	RES,CHIP	22	5%	1/10W
R892	1-216-009-91	RES,CHIP	22	5%	1/10W
R893	1-216-009-91	RES,CHIP	22	5%	1/10W
R894	1-216-009-91	RES,CHIP	22	5%	1/10W
R895	1-216-009-91	RES,CHIP	22	5%	1/10W
R896	1-216-009-91	RES,CHIP	22	5%	1/10W
R897	1-216-009-91	RES,CHIP	22	5%	1/10W
R898	1-216-009-91	RES,CHIP	22	5%	1/10W
R899	1-216-073-00	RES,CHIP	10K	5%	1/10W
R901	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R902	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R903	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W
R904	1-216-635-11	METAL CHIP	220	0.50%	1/10W
R905	1-216-635-11	METAL CHIP	220	0.50%	1/10W
R906	1-216-635-11	METAL CHIP	220	0.50%	1/10W
R907	1-216-635-11	METAL CHIP	220	0.50%	1/10W
R908	1-216-635-11	METAL CHIP	220	0.50%	1/10W
R909	1-216-635-11	METAL CHIP	220	0.50%	1/10W
R910	1-216-049-91	RES,CHIP	1K	5%	1/10W
R911	1-216-049-91	RES,CHIP	1K	5%	1/10W
R912	1-216-049-91	RES,CHIP	1K	5%	1/10W
R914	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R916	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R923	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R926	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R927	1-216-295-91	SHORT	0		
R929	1-216-025-91	RES,CHIP	100	5%	1/10W
R930	1-216-025-91	RES,CHIP	100	5%	1/10W
R931	1-216-041-00	RES,CHIP	470	5%	1/10W
R933	1-216-025-91	RES,CHIP	100	5%	1/10W
R934	1-216-025-91	RES,CHIP	100	5%	1/10W
R935	1-216-073-00	RES,CHIP	10K	5%	1/10W
R936	1-216-041-00	RES,CHIP	470	5%	1/10W
R937	1-216-025-91	RES,CHIP	100	5%	1/10W

REF. NO.	PART NO.	DESCRIPTION			REMARK
R938	1-216-025-91	RES,CHIP	100	5%	1/10W
R939	1-216-295-91	SHORT	0		
R940	1-216-295-91	SHORT	0		
R941	1-216-295-91	SHORT	0		
R942	1-216-037-00	RES,CHIP	330	5%	1/10W
R943	1-216-033-00	RES,CHIP	220	5%	1/10W
R944	1-216-295-91	SHORT	0		
R945	1-216-295-91	SHORT	0		
R951	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R952	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R953	1-216-295-91	SHORT	0		
R954	1-216-295-91	SHORT	0		
R955	1-216-295-91	SHORT	0		
R956	1-216-089-91	RES,CHIP	47K	5%	1/10W
R957	1-216-635-11	METAL CHIP	220	0.50%	1/10W
R958	1-216-635-11	METAL CHIP	220	0.50%	1/10W
R959	1-216-635-11	METAL CHIP	220	0.50%	1/10W
R960	1-216-635-11	METAL CHIP	220	0.50%	1/10W
R961	1-216-635-11	METAL CHIP	220	0.50%	1/10W
R962	1-216-635-11	METAL CHIP	220	0.50%	1/10W
R979	1-216-295-91	SHORT	0		
R981	1-216-037-00	RES,CHIP	330	5%	1/10W
R982	1-216-037-00	RES,CHIP	330	5%	1/10W
R983	1-216-089-91	RES,CHIP	47K	5%	1/10W
R984	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R985	1-216-113-00	RES,CHIP	470K	5%	1/10W
R986	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R987	1-216-049-91	RES,CHIP	1K	5%	1/10W
R988	1-216-033-00	RES,CHIP	220	5%	1/10W
R989	1-216-081-00	RES,CHIP	22K	5%	1/10W
R990	1-216-113-00	RES,CHIP	470K	5%	1/10W
R991	1-216-295-91	SHORT	0		
R993	1-216-089-91	RES,CHIP	47K	5%	1/10W
R994	1-216-033-00	RES,CHIP	220	5%	1/10W
R995	1-216-033-00	RES,CHIP	220	5%	1/10W
R996	1-216-037-00	RES,CHIP	330	5%	1/10W
R997	1-216-037-00	RES,CHIP	330	5%	1/10W
R998	1-216-073-00	RES,CHIP	10K	5%	1/10W
R2801	1-216-629-11	METAL CHIP	120	0.50%	1/10W
R2802	1-216-623-11	METAL CHIP	68	0.50%	1/10W
R2803	1-216-603-11	METAL CHIP	10	0.50%	1/10W
R2804	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R2805	1-216-623-11	METAL CHIP	68	0.50%	1/10W
R2806	1-216-611-11	METAL CHIP	22	0.50%	1/10W
R2809	1-216-295-91	SHORT	0		
R2810	1-216-295-91	SHORT	0		
R2813	1-216-295-91	SHORT	0		
R2815	1-216-295-91	SHORT	0		
R2817	1-216-295-91	SHORT	0		
R2818	1-216-295-91	SHORT	0		
R2820	1-216-295-91	SHORT	0		
R2822	1-216-295-91	SHORT	0		
RB001	1-239-409-11	NETWORK RESISTOR (CHIP) 47			
RB002	1-239-409-11	NETWORK RESISTOR (CHIP) 47			
RB003	1-239-409-11	NETWORK RESISTOR (CHIP) 47			
RB004	1-239-409-11	NETWORK RESISTOR (CHIP) 47			
RB005	1-239-409-11	NETWORK RESISTOR (CHIP) 47			

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REF. NO.	PART NO.	DESCRIPTION			REMARK
RB006	1-239-409-11	NETWORK RESISTOR (CHIP) 47			
RB007	1-239-414-11	NETWORK RESISTOR (CHIP) 150			
RB008	1-239-414-11	NETWORK RESISTOR (CHIP) 150			
RB009	1-239-414-11	NETWORK RESISTOR (CHIP) 150			
RB010	1-239-414-11	NETWORK RESISTOR (CHIP) 150			
RB011	1-239-414-11	NETWORK RESISTOR (CHIP) 150			
RB012	1-239-414-11	NETWORK RESISTOR (CHIP) 150			
RB013	1-239-621-11	NETWORK RESISTOR (CHIP) 22			
RB014	1-239-621-11	NETWORK RESISTOR (CHIP) 22			
RB015	1-239-621-11	NETWORK RESISTOR (CHIP) 22			
RB016	1-239-621-11	NETWORK RESISTOR (CHIP) 22			
RB017	1-239-621-11	NETWORK RESISTOR (CHIP) 22			
RB018	1-239-621-11	NETWORK RESISTOR (CHIP) 22			
RB019	1-239-409-11	NETWORK RESISTOR (CHIP) 47			
RB020	1-239-409-11	NETWORK RESISTOR (CHIP) 47			
RB021	1-239-409-11	NETWORK RESISTOR (CHIP) 47			
RB022	1-239-409-11	NETWORK RESISTOR (CHIP) 47			
RB023	1-239-409-11	NETWORK RESISTOR (CHIP) 47			
RB024	1-239-409-11	NETWORK RESISTOR (CHIP) 47			
RB025	1-239-409-11	NETWORK RESISTOR (CHIP) 47			
RB026	1-239-409-11	NETWORK RESISTOR (CHIP) 47			
RB027	1-239-409-11	NETWORK RESISTOR (CHIP) 47			
RB301	1-239-621-11	NETWORK RESISTOR (CHIP) 22			
RB302	1-239-621-11	NETWORK RESISTOR (CHIP) 22			
RB701	1-239-711-91	NETWORK RESISTOR (CHIP) 0			
RB702	1-239-711-91	NETWORK RESISTOR (CHIP) 0			
RB703	1-239-711-91	NETWORK RESISTOR (CHIP) 0			
RB704	1-239-711-91	NETWORK RESISTOR (CHIP) 0			
RB705	1-239-711-91	NETWORK RESISTOR (CHIP) 0			
RB706	1-239-711-91	NETWORK RESISTOR (CHIP) 0			
		<CRYSTAL>			
X801	1-781-649-21	OSCILLATOR, CRYSTAL			
X802	1-781-650-21	VIBRATOR, CRYSTAL			
X901	1-760-014-11	VIBRATOR, CERAMIC			
**********					
*	A-1136-069-A	BC4 BOARD COMPLETE			
		**********			
		<CAPACITOR>			
C2003	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C2005	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C2006	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C2010	1-163-102-00	CERAMIC CHIP	24PF	5%	50V
C2011	1-163-102-00	CERAMIC CHIP	24PF	5%	50V
C2015	1-165-319-11	CERAMIC CHIP	0.1MF		50V
C2016	1-165-319-11	CERAMIC CHIP	0.1MF		50V
C2017	1-165-319-11	CERAMIC CHIP	0.1MF		50V
C2018	1-165-319-11	CERAMIC CHIP	0.1MF		50V
C2021	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C2024	1-216-295-91	SHORT	0		
C2029	1-165-319-11	CERAMIC CHIP	0.1MF		50V
C2030	1-165-319-11	CERAMIC CHIP	0.1MF		50V
C2031	1-165-319-11	CERAMIC CHIP	0.1MF		50V
C2032	1-165-319-11	CERAMIC CHIP	0.1MF		50V
C2033	1-165-319-11	CERAMIC CHIP	0.1MF		50V
C2034	1-165-319-11	CERAMIC CHIP	0.1MF		50V
C2035	1-165-319-11	CERAMIC CHIP	0.1MF		50V
C2036	1-165-319-11	CERAMIC CHIP	0.1MF		50V
C2037	1-104-664-11	ELECT	47MF	20%	16V
C2038	1-165-319-11	CERAMIC CHIP	0.1MF		50V
C2039	1-165-319-11	CERAMIC CHIP	0.1MF		50V
C2040	1-165-319-11	CERAMIC CHIP	0.1MF		50V
C2041	1-126-924-11	ELECT	330MF	20%	6.3V
C2042	1-165-319-11	CERAMIC CHIP	0.1MF		50V
C2044	1-104-664-11	ELECT	47MF	20%	16V
C2045	1-163-106-00	CERAMIC CHIP	36PF	5%	50V
C2046	1-126-964-11	ELECT	10MF	20%	50V
C2047	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C2048	1-126-964-11	ELECT	10MF	20%	50V
C2049	1-126-960-11	ELECT	1MF	20%	50V
C2050	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C2051	1-126-964-11	ELECT	10MF	20%	50V
C2052	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C2053	1-126-960-11	ELECT	1MF	20%	50V
C2054	1-104-664-11	ELECT	47MF	20%	16V
C2055	1-104-664-11	ELECT	47MF	20%	16V
C2056	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C2057	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C2058	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C2059	1-104-664-11	ELECT	47MF	20%	16V
C2060	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C2061	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C2062	1-104-664-11	ELECT	47MF	20%	16V
C2063	1-165-319-11	CERAMIC CHIP	0.1MF		50V
C2064	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C2065	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C2066	1-104-664-11	ELECT	47MF	20%	16V
C2067	1-104-664-11	ELECT	47MF	20%	16V
C2068	1-104-664-11	ELECT	47MF	20%	16V
C2069	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C2070	1-104-664-11	ELECT	47MF	20%	16V
C2071	1-165-319-11	CERAMIC CHIP	0.1MF		50V
C2072	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C2074	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C2075	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C2078	1-104-664-11	ELECT	47MF	20%	16V
C2079	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C2080	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C2095	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C2096	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C2097	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
		<CONNECTOR>			
CN2001*	1-793-685-11	PIN, CONNECTOR (PC BOARD) 15P			

BC4

REF. NO.	PART NO.	DESCRIPTION	REMARK
		<FERRITE BEAD>	
FB2002	1-414-234-22	INDUCTOR CHIP 0UH	
FB2008	1-414-234-22	INDUCTOR CHIP 0UH	
FB2009	1-414-234-22	INDUCTOR CHIP 0UH	
FB2010	1-414-234-22	INDUCTOR CHIP 0UH	
FB2011	1-414-234-22	INDUCTOR CHIP 0UH	
FB2012	1-414-234-22	INDUCTOR CHIP 0UH	
FB2014	1-414-234-22	INDUCTOR CHIP 0UH	
FB2015	1-414-234-22	INDUCTOR CHIP 0UH	
FB2016	1-414-234-22	INDUCTOR CHIP 0UH	
FB2017	1-414-234-22	INDUCTOR CHIP 0UH	
		<FILTER>	
FL2001	1-239-848-11	FILTER, LOW PASS	
FL2002	1-239-848-11	FILTER, LOW PASS	
FL2003	1-239-848-11	FILTER, LOW PASS	
FL2004	1-239-848-11	FILTER, LOW PASS	
FL2005	1-233-512-21	FERRITE 37UH	
FL2006	1-233-512-21	FERRITE 37UH	
FL2007	1-233-512-21	FERRITE 37UH	
		<IC>	
IC2003	8-759-568-27	IC MSM514265C-60JSDR1	
IC2004	8-759-594-44	IC UPD64082GF-3BA	
IC2005	8-759-431-14	IC PQ3TZ53U	
		<COIL>	
L2001	1-410-200-31	INDUCTOR CHIP 4.7UH	
L2004	1-412-058-11	INDUCTOR CHIP 10UH	
L2005	1-412-058-11	INDUCTOR CHIP 10UH	
L2006	1-412-058-11	INDUCTOR CHIP 10UH	
L2007	1-412-058-11	INDUCTOR CHIP 10UH	
L2008	1-412-058-11	INDUCTOR CHIP 10UH	
		<TRANSISTOR>	
Q2002	8-729-216-22	TRANSISTOR 2SA1162-G	
Q2003	8-729-216-22	TRANSISTOR 2SA1162-G	
Q2004	8-729-216-22	TRANSISTOR 2SA1162-G	
Q2005	8-729-422-33	TRANSISTOR 2SD601A-Q-TX	
Q2006	8-729-422-33	TRANSISTOR 2SD601A-Q-TX	
Q2007	8-729-422-33	TRANSISTOR 2SD601A-Q-TX	
Q2008	8-729-422-33	TRANSISTOR 2SD601A-Q-TX	
Q2009	8-729-422-33	TRANSISTOR 2SD601A-Q-TX	
Q2010	8-729-422-33	TRANSISTOR 2SD601A-Q-TX	
Q2011	8-729-422-33	TRANSISTOR 2SD601A-Q-TX	
Q2012	8-729-216-22	TRANSISTOR 2SA1162-G	
Q2013	8-729-216-22	TRANSISTOR 2SA1162-G	
Q2014	8-729-422-33	TRANSISTOR 2SD601A-Q-TX	
Q2015	8-729-422-33	TRANSISTOR 2SD601A-Q-TX	
Q2016	8-729-422-33	TRANSISTOR 2SD601A-Q-TX	
Q2018	8-729-216-22	TRANSISTOR 2SA1162-G	
Q2019	8-729-422-33	TRANSISTOR 2SD601A-Q-TX	

REF. NO.	PART NO.	DESCRIPTION			REMARK
		<RESISTOR>			
R2011	1-216-041-00	RES,CHIP	470	5%	1/10W
R2015	1-216-041-00	RES,CHIP	470	5%	1/10W
R2019	1-216-295-91	SHORT	0		
R2021	1-216-025-91	RES,CHIP	100	5%	1/10W
R2027	1-216-049-91	RES,CHIP	1K	5%	1/10W
R2028	1-216-049-91	RES,CHIP	1K	5%	1/10W
R2029	1-216-043-91	RES,CHIP	560	5%	1/10W
R2030	1-216-043-91	RES,CHIP	560	5%	1/10W
R2031	1-216-067-00	RES,CHIP	5.6K	5%	1/10W
R2032	1-216-067-00	RES,CHIP	5.6K	5%	1/10W
R2033	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R2034	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R2035	1-216-043-91	RES,CHIP	560	5%	1/10W
R2036	1-216-649-11	METAL CHIP	820	0.50%	1/10W
R2037	1-216-044-00	RES,CHIP	620	5%	1/10W
R2039	1-216-047-91	RES,CHIP	820	5%	1/10W
R2040	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R2041	1-216-047-91	RES,CHIP	820	5%	1/10W
R2042	1-216-075-00	RES,CHIP	12K	5%	1/10W
R2043	1-216-085-00	RES,CHIP	33K	5%	1/10W
R2044	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R2046	1-216-075-00	RES,CHIP	12K	5%	1/10W
R2047	1-216-085-00	RES,CHIP	33K	5%	1/10W
R2048	1-216-049-91	RES,CHIP	1K	5%	1/10W
R2049	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R2050	1-216-017-91	RES,CHIP	47	5%	1/10W
R2051	1-216-049-91	RES,CHIP	1K	5%	1/10W
R2052	1-216-049-91	RES,CHIP	1K	5%	1/10W
R2053	1-216-041-00	RES,CHIP	470	5%	1/10W
R2054	1-216-041-00	RES,CHIP	470	5%	1/10W
R2055	1-216-017-91	RES,CHIP	47	5%	1/10W
R2056	1-216-067-00	RES,CHIP	5.6K	5%	1/10W
R2057	1-216-049-91	RES,CHIP	1K	5%	1/10W
R2058	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R2059	1-216-049-91	RES,CHIP	1K	5%	1/10W
R2060	1-216-025-91	RES,CHIP	100	5%	1/10W
R2061	1-216-043-91	RES,CHIP	560	5%	1/10W
R2062	1-216-105-91	RES,CHIP	220K	5%	1/10W
R2063	1-216-089-91	RES,CHIP	47K	5%	1/10W
R2064	1-216-049-91	RES,CHIP	1K	5%	1/10W
R2066	1-216-033-00	RES,CHIP	220	5%	1/10W
R2067	1-216-043-91	RES,CHIP	560	5%	1/10W
R2069	1-216-645-11	METAL CHIP	560	0.50%	1/10W
R2070	1-216-641-11	METAL CHIP	390	0.50%	1/10W
R2071	1-216-067-00	RES,CHIP	5.6K	5%	1/10W
R2072	1-216-043-91	RES,CHIP	560	5%	1/10W
R2073	1-216-049-91	RES,CHIP	1K	5%	1/10W
R2074	1-216-025-91	RES,CHIP	100	5%	1/10W
R2075	1-216-295-91	SHORT	0		
R2076	1-216-025-91	RES,CHIP	100	5%	1/10W
R2077	1-216-025-91	RES,CHIP	100	5%	1/10W
R2078	1-216-295-91	SHORT	0		
R2092	1-216-055-00	RES,CHIP	1.8K	5%	1/10W
R2093	1-216-055-00	RES,CHIP	1.8K	5%	1/10W
R2104	1-216-295-91	SHORT	0		

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

BC4 C

REF. NO.	PART NO.	DESCRIPTION			REMARK
R2105	1-216-295-91	SHORT	0		
R2106	1-216-295-91	SHORT	0		
R2107	1-216-295-91	SHORT	0		
R2108	1-216-049-91	RES,CHIP	1K	5%	1/10W
R2110	1-216-295-91	SHORT	0		
R2112	1-216-295-91	SHORT	0		
R2113	1-216-017-91	RES,CHIP	47	5%	1/10W
R2115	1-216-049-91	RES,CHIP	1K	5%	1/10W
R2116	1-216-295-91	SHORT	0		
R2117	1-216-295-91	SHORT	0		
R2118	1-216-296-91	SHORT	0		
R2119	1-216-296-91	SHORT	0		
R2200	1-216-296-91	SHORT	0		
		<VARIABLE RESISTOR>			
RV2001	1-223-271-21	RES, ADJ, CERMET 220			
		<CRYSTAL>			
X2001	1-767-606-11	VIBRATOR, CRYSTAL			

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*	A-1332-005-A	C BOARD MOUNTED **********			
4-382-854-11		SCREW (M3X10), P, SW (+)			
		<CAPACITOR>			
C9002	1-163-087-00	CERAMIC CHIP	4PF	0.25PF	50V
C9003	1-163-087-00	CERAMIC CHIP	4PF	0.25PF	50V
C9004	1-162-114-00	CERAMIC	0.0047MF		2KV
C9005	1-163-087-00	CERAMIC CHIP	4PF	0.25PF	50V
C9006	1-163-091-00	CERAMIC CHIP	8PF	0.25PF	50V
C9007	1-163-091-00	CERAMIC CHIP	8PF	0.25PF	50V
C9008	1-163-091-00	CERAMIC CHIP	8PF	0.25PF	50V
C9009	1-163-087-00	CERAMIC CHIP	4PF	0.25PF	50V
C9010	1-163-087-00	CERAMIC CHIP	4PF	0.25PF	50V
C9011	1-136-207-11	MYLAR	0.047MF	10%	250V
C9012	1-136-207-11	MYLAR	0.047MF	10%	250V
C9014	1-136-207-11	MYLAR	0.047MF	10%	250V
C9015	1-163-087-00	CERAMIC CHIP	4PF	0.25PF	50V
C9018	1-107-961-91	ELECT	10MF	20%	250V
C9019	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C9020	1-107-961-91	ELECT	10MF	20%	250V
C9021	1-107-961-91	ELECT	10MF	20%	250V
C9022	1-101-004-00	CERAMIC	0.01MF		50V
C9023	1-101-004-00	CERAMIC	0.01MF		50V
C9024	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C9025	1-104-653-11	ELECT	220MF	20%	16V
C9026	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C9027	1-101-004-00	CERAMIC	0.01MF		50V
C9028	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C9029	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C9030	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C9031	1-162-114-00	CERAMIC	0.0047MF		2KV
C9032	1-162-116-00	CERAMIC	680PF	10%	2KV
C9033	1-107-662-11	ELECT	22MF	20%	250V
C9042	1-126-940-11	ELECT	330MF	20%	25V
		<CONNECTOR>			
CN9001*	1-564-512-11	PLUG, CONNECTOR 9P			
CN9002	1-691-765-11	PLUG (MICRO CONNECTOR) 3P			
CN9003	1-695-915-11	TAB (CONTACT)			
CN9004	1-695-915-11	TAB (CONTACT)			
CN9005*	1-564-506-11	PLUG, CONNECTOR 3P			
CN9007	1-785-879-11	CONNECTOR, ONE TOUCH			
		<DIODE>			
D9002	8-719-400-75	DIODE MA3091			
D9005	8-719-073-01	DIODE MA111-(K8).S0			
D9006	8-719-051-85	DIODE HSS83TD			
D9007	8-719-051-85	DIODE HSS83TD			
D9008	8-719-051-85	DIODE HSS83TD			
D9009	8-719-908-03	DIODE GP08D			
D9010	8-719-110-17	DIODE RD10ESB2			
		<IC>			
IC9001	8-759-360-83	IC TDA6111Q/N4			
IC9002	8-759-360-83	IC TDA6111Q/N4			
IC9003	8-759-360-83	IC TDA6111Q/N4			
		<JACK>			
J9001 ⚠	1-540-071-22	SOCKET, CRT			
		<COIL>			
L9001	1-414-158-11	INDUCTOR	2.2UH		
L9002	1-408-591-11	INDUCTOR	1UH		
L9003	1-408-591-11	INDUCTOR	1UH		
L9004	1-408-591-11	INDUCTOR	1UH		
L9005	1-406-666-21	INDUCTOR	150UH		
L9006	1-412-526-11	INDUCTOR	12UH		
		<NEON LAMP>			
NL9001	1-519-526-11	LAMP, NEON			
		<TRANSISTOR>			
Q9001	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R			
Q9009	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R			
Q9010	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R			
Q9011	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R			

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

C D

REF. NO.	PART NO.	DESCRIPTION			REMARK
		<RESISTOR>			
R9001	1-216-059-00	RES,CHIP	2.7K	5%	1/10W
R9006	1-216-073-00	RES,CHIP	10K	5%	1/10W
R9007	1-208-789-11	METAL CHIP	2K	0.50%	1/10W
R9008	1-216-085-00	RES,CHIP	33K	5%	1/10W
R9012	1-216-049-91	RES,CHIP	1K	5%	1/10W
R9013	1-216-049-91	RES,CHIP	1K	5%	1/10W
R9018	1-216-059-00	RES,CHIP	2.7K	5%	1/10W
R9019	1-216-059-00	RES,CHIP	2.7K	5%	1/10W
R9021	1-216-295-91	SHORT	0		
R9023	1-216-295-91	SHORT	0		
R9026	1-208-789-11	METAL CHIP	2K	0.50%	1/10W
R9031	1-208-789-11	METAL CHIP	2K	0.50%	1/10W
R9033	1-208-808-11	METAL CHIP	12K	0.50%	1/10W
R9034	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R9035	1-208-790-11	METAL CHIP	2.2K	0.50%	1/10W
R9036	1-216-049-91	RES,CHIP	1K	5%	1/10W
R9037	1-240-233-71	METAL OXIDE	100	5%	3W
R9038	1-208-790-11	METAL CHIP	2.2K	0.50%	1/10W
R9039	1-208-790-11	METAL CHIP	2.2K	0.50%	1/10W
R9041	1-216-049-91	RES,CHIP	1K	5%	1/10W
R9042	1-216-049-91	RES,CHIP	1K	5%	1/10W
R9043	1-240-233-71	METAL OXIDE	100	5%	3W
R9044	1-240-233-71	METAL OXIDE	100	5%	3W
R9047	1-202-557-00	SOLID	220	20%	1/2W
R9048	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R9049	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R9050	1-249-424-11	CARBON	3.9K	5%	1/4W
R9051	1-202-557-00	SOLID	220	20%	1/2W
R9052	1-202-557-00	SOLID	220	20%	1/2W
R9053	1-249-424-11	CARBON	3.9K	5%	1/4W
R9054	1-249-424-11	CARBON	3.9K	5%	1/4W
R9055	1-202-884-11	SOLID	820K	20%	1/2W
R9056	1-202-813-00	SOLID	22K	10%	1/2W
R9057	1-202-847-00	SOLID	560K	20%	1/2W
R9058	1-202-884-11	SOLID	820K	20%	1/2W
R9059	1-202-818-00	SOLID	1K	20%	1/2W
R9061	1-202-549-00	SOLID	100	20%	1/2W
R9065	1-216-069-00	RES,CHIP	6.8K	5%	1/10W
R9068	1-216-101-00	RES,CHIP	150K	5%	1/10W
R9069	1-202-549-00	SOLID	100	20%	1/2W
R9070	1-216-037-00	RES,CHIP	330	5%	1/10W
R9071	1-216-037-00	RES,CHIP	330	5%	1/10W
R9072	1-216-037-00	RES,CHIP	330	5%	1/10W
R9073	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
		<VARIABLE RESISTOR>			
RV9001	1-241-714-11	RES, ADJ, METAL FILM 110M			
RV9002	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M			

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REF. NO.	PART NO.	DESCRIPTION			REMARK
*	A-1346-882-A	D BOARD COMPLETE			
		**********			
*	4-363-146-00	HEAT SINK, V.OUT			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
	4-382-854-21	SCREW (M3X14), P, SW (+)			
		<CAPACITOR>			
C6601	1-104-665-11	ELECT	100MF	20%	25V
C6602	1-129-720-00	FILM	0.033MF	5%	630V
C6604	1-126-967-11	ELECT	47MF	20%	50V
C6606	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C6607 ⚠	1-119-886-51	CERAMIC	470PF	10%	250V
C6608 ⚠	1-119-886-51	CERAMIC	470PF	10%	250V
C6609	1-137-198-81	MYLAR	1.0MF	5%	50V
C6610	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C6611	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C6612	1-126-964-11	ELECT	10MF	20%	50V
C6613	1-161-830-00	CERAMIC	0.0047MF	99%	500V
C6614	1-161-830-00	CERAMIC	0.0047MF		500V
C6615	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C6616	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C6617	1-161-830-00	CERAMIC	0.0047MF		500V
C6618	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C6619	1-161-830-00	CERAMIC	0.0047MF	99%	500V
C6620	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C6621	1-131-940-11	ELECT	1200MF	20%	250V
C6622	1-131-940-11	ELECT	1200MF	20%	250V
C6624	1-126-933-11	ELECT	100MF	20%	16V
C6625	1-129-718-00	FILM	0.022MF	5%	630V
C6626	1-130-029-00	FILM	8200PF	2%	50V
C6627	1-102-129-00	CERAMIC	0.01MF	10%	50V
C6628	1-104-330-91	CERAMIC	470PF	10%	1KV
C6630	1-107-680-91	ELECT	22MF	20%	450V
C6631	1-126-964-11	ELECT	10MF	20%	50V
C6632	1-126-963-11	ELECT	4.7MF	20%	50V
C6633	1-126-967-11	ELECT	47MF	20%	50V
C6634	1-126-968-11	ELECT	100MF	20%	50V
C6635	1-102-973-00	CERAMIC	100PF	5%	50V
C6637	1-109-879-11	CERAMIC	22PF	5%	2KV
C6638	1-126-964-11	ELECT	10MF	20%	50V
C6639	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C6640	1-104-330-91	CERAMIC	470PF	10%	1KV
C6641	1-104-341-11	MYLAR	0.1MF	10%	250V
C6642	1-126-964-11	ELECT	10MF	20%	50V
C6643	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C6648	1-126-941-11	ELECT	470MF	20%	25V
C6649	1-104-665-11	ELECT	100MF	20%	25V
C6650	1-162-115-00	CERAMIC	330PF	10%	1KV
C6651	1-162-115-00	CERAMIC	330PF	10%	1KV
C6652	1-110-626-11	ELECT	330MF	20%	160V
C6653	1-137-368-11	MYLAR	0.0047MF	5%	50V
C6654	1-126-936-11	ELECT	3300MF	20%	16V
C6655	1-126-942-61	ELECT	1000MF	20%	25V
C6656	1-136-165-00	MYLAR	0.1MF	5%	50V

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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REF. NO.	PART NO.	DESCRIPTION			REMARK
C6658	1-126-944-11	ELECT	3300MF	20%	25V
C6659	1-126-944-11	ELECT	3300MF	20%	25V
C6660	1-126-960-11	ELECT	1MF	20%	50V
C6661	1-104-664-11	ELECT	47MF	20%	16V
C6662	1-104-664-11	ELECT	47MF	20%	16V
C6663	1-102-129-00	CERAMIC	0.01MF	10%	50V
C6664	1-102-129-00	CERAMIC	0.01MF	10%	50V
C6665	1-126-964-11	ELECT	10MF	20%	50V
C6666	1-137-370-11	MYLAR	0.01MF	5%	50V
C6668	1-104-664-11	ELECT	47MF	20%	25V
C6669	1-162-115-00	CERAMIC	330PF	10%	1KV
C6670	1-162-115-00	CERAMIC	330PF	10%	1KV
C6671	1-129-718-00	FILM	0.022MF	5%	630V
C6672	1-104-331-11	CERAMIC	0.0022MF	10%	1KV
C6673	1-104-331-11	CERAMIC	0.0022MF	10%	1KV
C6674	1-128-527-11	ELECT	330MF	20%	25V
C6677	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C6679	1-107-823-11	CERAMIC CHIP	0.47MF	10%	16V
C6680	1-136-157-00	MYLAR	0.022MF	5%	50V
C6800	1-126-964-11	ELECT	10MF	20%	50V
C6801	1-126-960-11	ELECT	1MF	20%	50V
C6802	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C6803	1-102-129-00	CERAMIC	0.01MF	10%	50V
C6804	1-102-129-00	CERAMIC	0.01MF	10%	50V
C6805	1-111-087-11	ELECT	330MF	20%	25V
C6806	1-107-933-11	ELECT	100MF	20%	100V
C6808	1-106-228-00	MYLAR	0.22MF	10%	100V
C6809	1-102-074-00	CERAMIC	0.001MF	10%	50V
C6810	1-106-220-00	MYLAR	0.1MF	10%	100V
C6811	1-111-087-11	ELECT	330MF	20%	25V
C6812	1-130-785-11	MYLAR	0.47MF	10%	100V
C6813	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C6814	1-115-565-11	CERAMIC CHIP	2.2MF	10%	10V
C6815	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C6816	1-136-207-11	MYLAR	0.047MF	5%	400V
C6817	1-126-967-11	ELECT	47MF	20%	50V
C6818	1-126-960-11	ELECT	1MF	20%	50V
C6819	1-126-960-11	ELECT	1MF	20%	50V
C6820	1-102-114-00	CERAMIC	470PF	10%	50V
C6821	1-106-383-00	MYLAR	0.047MF	10%	200V
C6822	1-102-114-00	CERAMIC	470PF	10%	50V
C6823	1-106-383-00	MYLAR	0.047MF	10%	200V
C6826	1-102-030-00	CERAMIC	330PF	10%	500V
C6827	1-102-030-00	CERAMIC	330PF	10%	500V
C6828	1-106-343-00	MYLAR	0.001MF	10%	200V
C6829	1-162-558-11	CERAMIC	100PF	10%	2KV
C6831	1-117-835-21	FILM	6200PF	3%	1.5KV
C6832	1-117-836-21	FILM	6800PF	3%	1.5KV
C6833	1-136-287-11	FILM	0.0047MF	5%	100V
C6834	1-125-893-11	FILM	680PF	3%	1.5KV
C6835	1-125-893-11	FILM	680PF	3%	1.5KV
C6836	1-137-150-11	FILM	0.01MF	5%	100V
C6837	1-125-893-11	FILM	680PF	3%	1.5KV
C6838	1-125-893-11	FILM	680PF	3%	1.5KV
C6839	1-126-933-11	ELECT	100MF	20%	16V
C6840	1-126-933-11	ELECT	100MF	20%	16V
C6841	1-117-660-81	FILM	0.12MF	5%	250V
C6842	1-117-667-81	FILM	0.47MF	5%	250V

REF. NO.	PART NO.	DESCRIPTION			REMARK
C6843	1-115-339-11	CERAMIC CHIP	0.1MF	10%	50V
C6844	1-115-339-11	CERAMIC CHIP	0.1MF	10%	50V
C6845	1-115-514-11	FILM	0.22MF	5%	250V
C6846	1-109-945-11	FILM	0.18MF	5%	250V
C6848	1-107-846-11	FILM	0.1MF	5%	250V
C6849	1-115-339-11	CERAMIC CHIP	0.1MF	10%	50V
C6850	1-115-339-11	CERAMIC CHIP	0.1MF	10%	50V
C6851	1-107-639-11	ELECT	47MF	20%	160V
C6853	1-102-228-00	CERAMIC	470PF	10%	500V
C6854	1-126-941-11	ELECT	470MF	20%	25V
C6855	1-123-024-21	ELECT	33MF		160V
C6856	1-126-971-11	ELECT	470MF	20%	50V
C6857	1-102-228-00	CERAMIC	470PF	10%	500V
C6858	1-102-228-00	CERAMIC	470PF	10%	500V
C6859	1-162-129-00	CERAMIC	150PF	10%	2KV
C6860	1-162-131-11	CERAMIC	220PF	10%	2KV
C6862	1-130-202-00	FILM	0.022MF	5%	200V
C6863	1-107-906-11	ELECT	10MF	20%	50V
C6864	1-129-898-00	FILM	0.0022MF	5%	630V
C6865	1-130-202-00	FILM	0.022MF	5%	400V
C6866	1-102-030-00	CERAMIC	330PF	10%	500V
C6867	1-130-785-11	MYLAR	0.47MF	10%	100V
C6868	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C6871	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C6872	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C6874	1-136-165-00	MYLAR	0.1MF	5%	50V
C6875	1-104-664-11	ELECT	47MF	20%	16V
C6876	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C6877	1-126-964-11	ELECT	10MF	20%	50V
C6878	1-126-320-11	ELECT	10MF	20%	16V
C6879	1-107-960-11	ELECT	4.7MF	20%	160V
C6880	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C6882	1-104-574-11	CERAMIC	0.0047MF	10%	2KV
C6883	1-126-964-11	ELECT	10MF	20%	50V
C6884	1-115-565-11	CERAMIC CHIP	2.2MF	10%	10V
C6885	1-162-131-11	CERAMIC	220PF	10%	2KV

<CONNECTOR>

CN6602*⚠	1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P
CN6603*⚠	1-573-963-11	PIN, CONNECTOR (PC BOARD) 3P
CN6604*⚠	1-691-291-11	PIN, CONNECTOR (PC BOARD) 5P
CN6605*⚠	1-564-513-11	PLUG, CONNECTOR 10P
CN6606*	1-564-510-11	PLUG, CONNECTOR 7P
CN6608*	1-564-506-11	PLUG, CONNECTOR 3P
CN6609*	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P
CN6610*	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P
CN6611*	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P
CN6612*	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P
CN6613*	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P
CN6614*	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P
CN6615*	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P
CN6616*	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P
CN6618*	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P
CN6800	1-785-802-11	PIN, CONNECTOR (WITH PWB) 20P
CN6801*⚠	1-785-270-12	PIN, DY CONNECTOR (PC BOARD)

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REF. NO.	PART NO.	DESCRIPTION	REMARK
CN6802	1-793-495-11	CONNECTOR, BOARD TO BOARD 50P	
CN6804	1-691-765-11	PLUG (MICRO CONNECTOR) 3P	
CN6808	1-695-915-11	TAB (CONTACT)	
CN6810	1-785-879-11	CONNECTOR, ONE TOUCH	
CN6811*	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P	
CN6812*	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P	
		<DIODE>	
D6601	8-719-911-19	DIODE 1SS119-25	
D6602	8-719-073-01	DIODE MA111-(K8).S0	
D6603	8-719-073-01	DIODE MA111-(K8).S0	
D6604	8-719-073-01	DIODE MA111-(K8).S0	
D6605	8-719-510-53	DIODE D4SB60L	
D6606	8-719-073-01	DIODE MA111-(K8).S0	
D6607	8-719-073-01	DIODE MA111-(K8).S0	
D6608	8-719-073-01	DIODE MA111-(K8).S0	
D6609	8-719-911-19	DIODE 1SS119-25	
D6610	8-719-073-01	DIODE MA111-(K8).S0	
D6611	8-719-073-01	DIODE MA111-(K8).S0	
D6612	8-719-911-55	DIODE U05G	
D6613	8-719-911-55	DIODE U05G	
D6614	8-719-110-30	DIODE RD12ESB1	
D6615	8-719-911-19	DIODE 1SS119-25	
D6616	8-719-911-55	DIODE U05G	
D6617	8-719-911-55	DIODE U05G	
D6618	8-719-073-01	DIODE MA111-(K8).S0	
D6619	8-719-110-30	DIODE RD12ESB1	
D6621	8-719-075-73	DIODE 10ELS2N-TB5	
D6622	8-719-979-64	DIODE UF4005PKG23	
D6623	8-719-059-23	DIODE P6KE200AG23	
D6624	8-719-077-66	DIODE 11EQS03LN-TAIB2	
D6625	8-719-110-36	DIODE RD13ESB2	
D6626	8-719-979-64	DIODE UF4005PKG23	
D6628	8-719-063-73	DIODE D1NL20U-TR	
D6631	8-719-050-18	DIODE D4SBL20U	
D6632	8-719-073-01	DIODE MA111-(K8).S0	
D6633	8-719-510-12	DIODE D10SC4M	
D6634	8-719-060-88	DIODE D4SBS6	
D6635	8-719-110-47	DIODE RD18ESB	
D6636	8-719-911-19	DIODE 1SS119-25	
D6639	8-719-063-73	DIODE D1NL20U-TR	
D6640	8-719-110-72	DIODE RD30ESB2	
D6641	8-719-109-96	DIODE RD6.8ESB1	
D6642	8-719-911-19	DIODE 1SS119-25	
D6643	8-719-979-64	DIODE UF4005PKG23	
D6644	8-719-052-92	DIODE D10SBS4F	
D6648	8-719-110-30	DIODE RD12ESB1	
D6649	8-719-073-01	DIODE MA111-(K8).S0	
D6650	8-719-911-19	DIODE 1SS119-25	
D6651	8-719-977-95	DIODE DTZ-TT11-2.4B	
D6652	8-719-110-47	DIODE RD18ESB	
D6800	8-719-110-03	DIODE RD7.5ESB2	
D6801	8-719-911-19	DIODE 1SS119-25	
D6803	8-719-510-73	DIODE S3L20UF4	
D6805	8-719-110-39	DIODE RD15ESB1	
D6806	8-719-911-19	DIODE 1SS119-25	
D6807	8-719-109-68	DIODE RD3.6ESB1	
D6808	8-719-914-43	DIODE DAN202K	
D6809	8-719-908-03	DIODE GP08D	
D6812	8-719-110-39	DIODE RD15ESB1	
D6813	8-719-302-43	DIODE EL1Z	
D6814	8-719-018-82	DIODE RGP02-20EL-6394	
D6816	8-719-510-73	DIODE S3L20UF4	
D6817	8-719-510-73	DIODE S3L20UF4	
D6820	8-719-970-87	DIODE ERA38-06	
D6821	8-719-970-87	DIODE ERA38-06	
D6823	8-719-911-19	DIODE 1SS119-25	
D6824	8-719-510-73	DIODE S3L20UF4	
D6825	8-719-914-43	DIODE DAN202K	
D6826	8-719-911-19	DIODE 1SS119-25	
		<FERRITE BEAD>	
FB6602	1-239-358-21	FILTER, NOISE	
FB6603	1-239-358-21	FILTER, NOISE	
		<IC>	
IC6601	8-759-198-31	IC UPC1093J-1-T	
IC6602	8-759-103-93	IC UPC393C	
IC6603	8-749-016-66	IC MCR5152	
IC6604	8-759-468-89	IC TOP209P	
IC6606	8-759-450-47	IC BA05T	
IC6607	8-749-012-13	IC DM-58	
IC6608	8-759-103-93	IC UPC393C	
IC6800	8-759-192-71	IC STV9379	
IC6801	8-759-450-95	IC LM393N	
IC6804	8-759-394-36	IC BA09T	
IC6805	8-759-394-35	IC BA12T	
		<CHIP CONDUCTOR>	
JR6603	1-216-295-91	SHORT 0	
JR6604	1-216-296-91	SHORT 0	
JR6605	1-216-296-91	SHORT 0	
JR6606	1-216-296-91	SHORT 0	
JR6607	1-216-295-91	SHORT 0	
JR6608	1-216-296-91	SHORT 0	
JR6609	1-216-295-91	SHORT 0	
JR6610	1-216-296-91	SHORT 0	
JR6611	1-216-295-91	SHORT 0	
JR6802	1-216-296-91	SHORT 0	
JR6803	1-216-295-91	SHORT 0	
JR6810	1-216-295-91	SHORT 0	
		<COIL>	
L6601	1-412-525-31	INDUCTOR 10UH	
L6602	1-410-397-21	FERRITE 1.1UH	
L6603	1-410-397-21	FERRITE 1.1UH	
L6604	1-412-525-31	INDUCTOR 10UH	
L6605	1-412-525-31	INDUCTOR 10UH	

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REF. NO.	PART NO.	DESCRIPTION		REMARK
L6606	1-412-525-31	INDUCTOR	10UH	
L6607	1-412-519-11	INDUCTOR	3.3UH	
L6800	1-412-525-31	INDUCTOR	10UH	
L6801	1-406-675-11	INDUCTOR	4.7MMH	
L6803	1-406-985-11	INDUCTOR	2.2MMH	
L6804	1-412-519-11	INDUCTOR	3.3UH	
L6805	1-412-519-11	INDUCTOR	3.3UH	
L6806	1-412-519-11	INDUCTOR	3.3UH	
L6807	1-412-552-11	INDUCTOR	2.2MMH	
L6808	1-406-674-11	INDUCTOR	3.3MMH	
		<NEON LAMP>		
NL6601	1-533-429-11	GAP, SPARK		
		<PHOTO COUPLER>		
PH6601	8-749-924-35	PHOTO COUPLER ON3171-R		
PH6602	8-749-924-35	PHOTO COUPLER ON3171-R		
		<IC LINK>		
PS6605	1-533-597-41	LINK, IC		
PS6606	1-533-597-41	LINK, IC		
PS6607	1-533-597-41	LINK, IC		
PS6801	1-532-841-21	LINK, IC		
		<TRANSISTOR>		
Q6601	8-729-119-78	TRANSISTOR 2SC2785-HFE		
Q6602	8-729-119-78	TRANSISTOR 2SC2785-HFE		
Q6603	8-729-119-76	TRANSISTOR 2SA1175-HFE		
Q6604	8-729-119-76	TRANSISTOR 2SA1175-HFE		
Q6605	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q6606	8-729-140-93	TRANSISTOR 2SB733-34		
Q6608	8-729-200-21	TRANSISTOR 2SC2500-B		
Q6609	8-729-029-56	TRANSISTOR DTA144ESA		
Q6610	8-729-119-78	TRANSISTOR 2SC2785-HFE		
Q6611	8-729-029-66	TRANSISTOR DTC114ESA		
Q6612	8-729-029-66	TRANSISTOR DTC114ESA		
Q6613	8-729-030-02	TRANSISTOR DTC144ESA		
Q6614	8-729-119-76	TRANSISTOR 2SA1175-HFE		
Q6615	1-801-806-11	TRANSISTOR DTC144EKA-T146		
Q6616	8-729-029-66	TRANSISTOR DTC114ESA		
Q6800	8-729-422-33	TRANSISTOR 2SD601A-Q-TX		
Q6801	8-729-039-68	TRANSISTOR IRF620		
Q6802	8-729-046-33	TRANSISTOR IRF720-LF49		
Q6803	8-729-119-76	TRANSISTOR 2SA1175-HFE		
Q6804	8-729-119-78	TRANSISTOR 2SC2785-HFE		
Q6805	8-729-140-96	TRANSISTOR 2SD774-34		
Q6806	8-729-140-96	TRANSISTOR 2SD774-34		
Q6807	8-729-046-18	TRANSISTOR 2SC5480-01		
Q6808	8-729-046-18	TRANSISTOR 2SC5480-01		
Q6809	8-729-038-83	TRANSISTOR 2SK2251-01-F19		
Q6810	8-729-047-60	TRANSISTOR IRFI830G-LF49		
Q6811	1-801-806-11	TRANSISTOR DTC144EKA-T146		
Q6812	8-729-043-95	TRANSISTOR 2SC3840(3)		
Q6813	8-729-422-33	TRANSISTOR 2SD601A-Q-TX		
Q6814	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q6815	8-729-045-65	TRANSISTOR 2SA1776TV2Q		
Q6816	8-729-140-96	TRANSISTOR 2SD774-34		
Q6817	8-729-422-33	TRANSISTOR 2SD601A-Q-TX		
Q6818	1-801-806-11	TRANSISTOR DTC144EKA-T146		
Q6819	1-801-806-11	TRANSISTOR DTC144EKA-T146		
Q6820	8-729-422-33	TRANSISTOR 2SD601A-Q-TX		
Q6821	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q6823	8-729-422-33	TRANSISTOR 2SD601A-Q-TX		
		<RESISTOR>		
R6500	1-220-797-11	CEMENTED	0.47 5% 10W F	
R6600	1-216-295-91	SHORT	0	
R6602	1-247-831-91	CARBON	1K 5% 1/4W	
R6603	1-208-806-11	METAL CHIP	10K 0.50% 1/10W	
R6604	1-208-806-11	METAL CHIP	10K 0.50% 1/10W	
R6605	1-215-471-00	METAL	120K 1% 1/4W	
R6606	1-215-466-00	METAL	75K 1% 1/4W	
R6607	1-215-489-00	METAL	680K 1% 1/4W	
R6608	1-215-489-00	METAL	680K 1% 1/4W	
R6609	1-215-489-00	METAL	680K 1% 1/4W	
R6610	1-208-830-11	METAL CHIP	100K 0.50% 1/10W	
R6611	1-208-798-11	METAL CHIP	4.7K 0.50% 1/10W	
R6612	1-215-471-00	METAL	120K 1% 1/4W	
R6613	1-215-489-00	METAL	680K 1% 1/4W	
R6614	1-215-489-00	METAL	680K 1% 1/4W	
R6615	1-215-489-00	METAL	680K 1% 1/4W	
R6616	1-208-830-11	METAL CHIP	100K 0.50% 1/10W	
R6617	1-208-844-11	METAL CHIP	390K 0.50% 1/10W	
R6618	1-215-466-00	METAL	75K 1% 1/4W	
R6619	1-216-113-00	RES,CHIP	470K 5% 1/10W	
R6620	1-208-846-11	METAL CHIP	470K 0.50% 1/10W	
R6621	1-216-073-00	RES,CHIP	10K 5% 1/10W	
R6622	1-220-797-11	CEMENTED	0.47 5% 10W F	
R6623	1-215-457-00	METAL	33K 1% 1/4W	
R6624	1-208-830-11	METAL CHIP	100K 0.50% 1/10W	
R6625	1-208-826-11	METAL CHIP	68K 0.50% 1/10W	
R6626	1-208-830-11	METAL CHIP	100K 0.50% 1/10W	
R6627	1-208-834-11	METAL CHIP	150K 0.50% 1/10W	
R6628	1-216-073-00	RES,CHIP	10K 5% 1/10W	
R6629	1-215-466-00	METAL	75K 1% 1/4W	
R6630	1-215-489-00	METAL	680K 1% 1/4W	
R6631	1-215-489-00	METAL	680K 1% 1/4W	
R6632	1-215-489-00	METAL	680K 1% 1/4W	
R6633	1-215-458-00	METAL	36K 1% 1/4W	
R6634	1-215-489-00	METAL	680K 1% 1/4W	
R6635	1-215-489-00	METAL	680K 1% 1/4W	
R6636	1-215-489-00	METAL	680K 1% 1/4W	
R6637	1-215-463-00	METAL	56K 1% 1/4W	
R6638	1-240-876-11	CEMENTED	1 5% 15W	
R6639	1-240-876-11	CEMENTED	1 5% 15W	
R6640	1-216-081-00	RES,CHIP	22K 5% 1/10W	
R6641	1-260-131-11	CARBON	470K 5% 1/2W	
R6642	1-260-131-11	CARBON	470K 5% 1/2W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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REF. NO.	PART NO.	DESCRIPTION			REMARK
R6643	1-216-081-00	RES,CHIP	22K	5%	1/10W
R6644	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R6645	1-202-933-61	FUSIBLE	0.1	10%	1/2W
R6646	1-216-073-00	RES,CHIP	10K	5%	1/10W
R6647	1-215-864-00	METAL OXIDE	150	5%	1W F
R6648	1-215-481-00	METAL	330K	1%	1/4W
R6649	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R6650	1-215-481-00	METAL	330K	1%	1/4W
R6651	1-215-430-00	METAL	2.4K	1%	1/4W
R6652	1-215-450-00	METAL	16K	1%	1/4W
R6653	1-219-776-11	CARBON	2.2M	10%	1/2W
R6654	1-216-089-91	RES,CHIP	47K	5%	1/10W
R6655	1-216-073-00	RES,CHIP	10K	5%	1/10W
R6656	1-215-481-00	METAL	330K	1%	1/4W
R6657	1-247-791-91	CARBON	22	5%	1/4W
R6658	1-216-073-00	RES,CHIP	10K	5%	1/10W
R6659	1-216-073-00	RES,CHIP	10K	5%	1/10W
R6660	1-249-389-11	CARBON	4.7	5%	1/4W F
R6661	1-215-421-00	METAL	1K	1%	1/4W
R6662	1-216-381-11	METAL OXIDE	0.22	5%	3W F
R6663	1-216-381-11	METAL OXIDE	0.22	5%	3W F
R6665	1-219-776-11	CARBON	2.2M	10%	1/2W
R6666	1-208-782-11	METAL CHIP	1K	0.50%	1/10W
R6667	1-249-413-11	CARBON	470	5%	1/4W
R6668	1-216-017-91	RES,CHIP	47	5%	1/10W
R6669	1-247-831-91	CARBON	1K	5%	1/4W
R6672	1-249-421-11	CARBON	2.2K	5%	1/4W
R6674	1-249-827-91	CARBON	680	5%	1/4W
R6679	1-249-437-11	CARBON	47K	5%	1/4W
R6680	1-216-362-11	METAL OXIDE	0.27	5%	2W F
R6681	1-249-429-11	CARBON	10K	5%	1/4W
R6682	1-249-416-11	CARBON	820	5%	1/4W
R6683	1-260-127-11	CARBON	220K	5%	1/2W
R6685	1-249-421-11	CARBON	2.2K	5%	1/4W
R6686 ⚠	1-218-265-11	METAL	8.2M	5%	1W
R6688	1-249-417-11	CARBON	1K	5%	1/4W F
R6689	1-249-389-11	CARBON	4.7	5%	1/4W
R6690	1-249-429-11	CARBON	10K	5%	1/4W
R6691	1-260-131-11	CARBON	470K	5%	1/2W
R6692	1-249-410-11	CARBON	270	5%	1/4W
R6693	1-215-451-00	METAL	18K	1%	1/4W
R6694	1-215-471-00	METAL	120K	1%	1/4W
R6696	1-215-925-11	METAL OXIDE	22K	5%	3W F
R6697	1-249-429-11	CARBON	10K	5%	1/4W
R6698	1-247-831-91	CARBON	1K	5%	1/4W
R6701	1-216-073-00	RES,CHIP	10K	5%	1/10W
R6702	1-216-093-91	RES,CHIP	68K	5%	1/10W
R6703	1-216-091-00	RES,CHIP	56K	5%	1/10W
R6704	1-249-377-11	CARBON	0.47	5%	1/4W F
R6707	1-249-421-11	CARBON	2.2K	5%	1/4W
R6710	1-217-158-00	METAL	0.47	10%	5W
R6711	1-215-471-00	METAL	120K	1%	1/4W
R6712	1-215-451-00	METAL	18K	1%	1/4W
R6713	1-249-423-11	CARBON	3.3K	5%	1/4W F
R6714	1-249-423-11	CARBON	3.3K	5%	1/4W F
R6800	1-249-429-11	CARBON	10K	5%	1/4W
R6801	1-249-429-11	CARBON	10K	5%	1/4W

REF. NO.	PART NO.	DESCRIPTION			REMARK
R6802	1-249-429-11	CARBON	10K	5%	1/4W
R6803	1-216-073-00	RES,CHIP	10K	5%	1/10W
R6804	1-208-796-11	METAL CHIP	3.9K	0.50%	1/10W
R6805	1-215-441-00	METAL	6.8K	1%	1/4W
R6806	1-215-435-00	METAL	3.9K	1%	1/4W
R6807	1-249-383-11	CARBON	1.5	5%	1/4W F
R6810	1-214-798-21	METAL	1.8	1%	1/2W
R6811	1-215-913-11	METAL OXIDE	220	5%	3W F
R6812	1-247-843-11	CARBON	3.3K	5%	1/4W
R6813	1-214-798-21	METAL	1.8	1%	1/2W
R6814	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R6815	1-208-801-11	METAL CHIP	6.2K	0.50%	1/10W
R6816	1-214-915-00	METAL	120K	1%	1/2W
R6818	1-215-485-00	METAL	470K	1%	1/4W
R6819	1-249-421-11	CARBON	2.2K	5%	1/4W
R6820	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R6822	1-216-461-00	METAL OXIDE	5.6K	5%	2W F
R6823	1-215-895-11	METAL OXIDE	3.3K	5%	2W F
R6824	1-249-411-11	CARBON	330	5%	1/4W
R6825	1-249-411-11	CARBON	330	5%	1/4W
R6826	1-216-459-00	METAL OXIDE	2.7K	5%	2W F
R6827	1-215-895-11	METAL OXIDE	3.3K	5%	2W F
R6828	1-247-831-91	CARBON	1K	5%	1/4W
R6829	1-247-831-91	CARBON	1K	5%	1/4W
R6830	1-247-764-11	CARBON	10K	5%	1/2W F
R6831	1-247-764-11	CARBON	10K	5%	1/2W F
R6832	1-215-477-00	METAL	220K	1%	1/4W
R6833	1-215-493-00	METAL	1M	1%	1/4W
R6834	1-216-381-11	METAL OXIDE	0.22	5%	3W F
R6835	1-216-381-11	METAL OXIDE	0.22	5%	3W F
R6836	1-215-905-11	METAL OXIDE	10	5%	3W F
R6837	1-215-905-11	METAL OXIDE	10	5%	3W F
R6838	1-215-461-00	METAL	47K	1%	1/4W
R6839	1-249-405-11	CARBON	100	5%	1/4W F
R6841	1-216-434-11	METAL OXIDE	1.8K	5%	1W F
R6842	1-215-923-00	METAL OXIDE	10K	5%	3W F
R6843	1-216-073-00	RES,CHIP	10K	5%	1/10W
R6844	1-247-807-31	CARBON	100	5%	1/4W
R6846	1-260-127-11	CARBON	220K	5%	1/2W
R6849	1-249-443-11	CARBON	0.47	5%	1/4W F
R6850	1-249-443-11	CARBON	0.47	5%	1/4W F
R6851	1-260-288-11	CARBON	0.47	5%	1/2W F
R6852	1-216-345-11	METAL OXIDE	0.47	5%	1W F
R6853	1-260-288-11	CARBON	0.47	5%	1/2W F
R6854	1-215-923-00	METAL OXIDE	10K	5%	3W F
R6855	1-214-899-81	METAL	27K	1%	1/2W
R6856	1-215-923-00	METAL OXIDE	10K	5%	3W F
R6857	1-215-923-00	METAL OXIDE	10K	5%	3W F
R6858	1-214-899-81	METAL	27K	1%	1/2W
R6859	1-215-871-11	METAL OXIDE	2.2K	5%	1W F
R6860	1-215-923-00	METAL OXIDE	10K	5%	3W F
R6861	1-216-295-91	SHORT	0		
R6862	1-216-081-00	RES,CHIP	22K	5%	1/10W
R6863	1-215-894-11	METAL OXIDE	2.2K	5%	2W F
R6864	1-216-081-00	RES,CHIP	22K	5%	1/10W
R6865	1-216-103-00	RES,CHIP	180K	5%	1/10W
R6866	1-215-433-00	METAL	3.3K	1%	1/4W
R6867	1-216-065-91	RES,CHIP	4.7K	5%	1/10W

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

D **DH**

REF. NO.	PART NO.	DESCRIPTION			REMARK
R6868	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R6869	1-216-115-00	RES,CHIP	560K	5%	1/10W
R6870	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R6871	1-208-822-11	METAL CHIP	47K	0.50%	1/10W
R6872	1-260-125-11	CARBON	150K	5%	1/2W
R6873	1-260-125-11	CARBON	150K	5%	1/2W
R6875	1-247-831-91	CARBON	1K	5%	1/4W
R6876	1-216-391-11	METAL OXIDE	1.5	5%	3W F
R6877	1-208-790-11	METAL CHIP	2.2K	0.50%	1/10W
R6878	1-208-770-11	METAL CHIP	330	0.50%	1/10W
R6880	1-215-441-00	METAL	6.8K	1%	1/4W
R6881	1-215-453-00	METAL	22K	1%	1/4W
R6882	1-215-456-00	METAL	30K	1%	1/4W
R6883	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R6884	1-249-441-11	CARBON	100K	5%	1/4W
R6885	1-208-798-11	METAL CHIP	4.7K	0.50%	1/10W
R6886	1-208-798-11	METAL CHIP	4.7K	0.50%	1/10W
R6887	1-216-081-00	RES,CHIP	22K	5%	1/10W
R6888	1-216-089-91	RES,CHIP	47K	5%	1/10W
R6889	1-260-125-11	CARBON	150K	5%	1/2W
R6890	1-260-125-11	CARBON	150K	5%	1/2W
R6891	1-216-069-00	RES,CHIP	6.8K	5%	1/10W
R6892	1-216-097-91	RES,CHIP	100K	5%	1/10W
R6893	1-216-085-00	RES,CHIP	33K	5%	1/10W
R6894	1-260-133-11	CARBON	680K	5%	1/2W
R6895	1-216-097-91	RES,CHIP	100K	5%	1/10W
R6896	1-216-089-91	RES,CHIP	47K	5%	1/10W
R6897	1-216-097-91	RES,CHIP	100K	5%	1/10W
R6899	1-216-073-00	RES,CHIP	10K	5%	1/10W
R6900	1-208-810-11	METAL CHIP	15K	0.50%	1/10W
R6901	1-208-810-11	METAL CHIP	15K	0.50%	1/10W
R6902	1-249-441-11	CARBON	100K	5%	1/4W
R6903	1-215-923-00	METAL OXIDE	10K	5%	3W F
R6905	1-249-389-11	CARBON	4.7	5%	1/4W F
R6906	1-216-079-00	RES,CHIP	18K	5%	1/10W
R6907	1-216-079-00	RES,CHIP	18K	5%	1/10W
		<RELAY>			
RY6601	1-515-840-11	RELAY			
RY6602	1-755-357-11	RELAY, AC POWER			
RY6603	1-755-357-11	RELAY, AC POWER			
		<TRANSFORMER>			
T6601 ⚠	1-431-732-11	TRANSFORMER, CONVERTER (SRT)			
T6602 ⚠	1-435-081-11	TRANSFORMER, CONVERTER (PIT)			
T6800	1-429-741-11	TRANSFORMER, DRIVE			
T6801	1-433-934-11	TRANSFORMER, FERRITE (DFT)			
T6802	1-433-489-11	TRANSFORMER, FERRITE (HDT)			
T6803 ⚠	8-598-851-00	FBT ASSY NX-4522			
T6804	1-433-489-11	TRANSFORMER, FERRITE (HDT)			
		<THERMISTOR>			
TH6601	1-803-540-11	THERMISTOR			
TH6603	1-803-586-11	THERMISTOR, NTC			

REF. NO.	PART NO.	DESCRIPTION	REMARK
		<VARISTOR>	
VD6601	1-803-614-11	VARISTOR	
		**********	
*	A-1343-791-A	DH BOARD MOUNTED (KV-ES29M80/ES29M81)	
*	A-1343-798-A	DH BOARD MOUNTED (KV-ES29M90)	
		**********	
		<CAPACITOR>	
C3801	1-126-964-11	ELECT 10MF 20% 50V	(KV-ES29M90 ONLY)
C3804	1-102-129-00	CERAMIC 0.01MF 10% 50V	(KV-ES29M90 ONLY)
C3805	1-126-964-11	ELECT 10MF 20% 50V	(KV-ES29M90 ONLY)
C3807	1-102-129-00	CERAMIC 0.01MF 10% 50V	(KV-ES29M90 ONLY)
C3816	1-126-964-11	ELECT 10MF 20% 50V	(KV-ES29M90 ONLY)
C3819	1-126-960-11	ELECT 1MF 20% 50V	(KV-ES29M90 ONLY)
C3822	1-136-165-00	MYLAR 0.1MF 5% 50V	(KV-ES29M90 ONLY)
		<CONNECTOR>	
CN3801	1-695-915-11	TAB (CONTACT)	
CN3802*	1-564-509-11	PLUG, CONNECTOR 6P (KV-ES29M90 ONLY)	
CN3803	1-695-915-11	TAB (CONTACT)	
		<DIODE>	
D3805	8-719-911-19	DIODE 1SS119-25 (KV-ES29M90 ONLY)	
		<IC>	
IC3805	8-759-822-38	IC LA6510 (KV-ES29M90 ONLY)	
IC3807	1-418-597-11	SENSOR UNIT, MAGNETIC (KV-ES29M90 ONLY)	
		<NEON LAMP>	
NL3801	1-576-414-21	GAP, SPARK	
		<TRANSISTOR>	
Q3807	8-729-030-02	TRANSISTOR DTC144ESA (KV-ES29M90 ONLY)	
Q3808	8-729-030-02	TRANSISTOR DTC144ESA (KV-ES29M90 ONLY)	
Q3809	8-729-119-78	TRANSISTOR 2SC2785-HFE	(KV-ES29M90 ONLY)
Q3810	8-729-119-76	TRANSISTOR 2SA1175-HFE	(KV-ES29M90 ONLY)
Q3811	8-729-119-78	TRANSISTOR 2SC2785-HFE	(KV-ES29M90 ONLY)
Q3812	8-729-119-78	TRANSISTOR 2SC2785-HFE	(KV-ES29M90 ONLY)

DH D1

REF. NO.	PART NO.	DESCRIPTION			REMARK
		<RESISTOR>			
R3802	1-247-831-91	CARBON	1K	5% 1/4W	
			(KV-ES29M90 ONLY)		
R3803	1-247-831-91	CARBON	1K	5% 1/4W	
			(KV-ES29M90 ONLY)		
R3804	1-215-444-00	METAL	9.1K	1% 1/4W	
			(KV-ES29M90 ONLY)		
R3807	1-215-413-00	METAL	470	1% 1/4W	
			(KV-ES29M90 ONLY)		
R3808	1-247-883-00	CARBON	150K	5% 1/4W	
			(KV-ES29M90 ONLY)		
R3809	1-249-439-11	CARBON	68K	5% 1/4W	
			(KV-ES29M90 ONLY)		
R3810	1-249-425-11	CARBON	4.7K	5% 1/4W	
			(KV-ES29M90 ONLY)		
R3811	1-219-510-11	CARBON	470K	5% 1/2W	
R3812	1-219-759-11	CARBON	1M	5% 1/2W	
R3814	1-249-411-11	CARBON	330	5% 1/4W	
			(KV-ES29M90 ONLY)		
R3823	1-249-395-11	CARBON	15	5% 1/4W	
			(KV-ES29M90 ONLY)		
R3825	1-247-831-91	CARBON	1K	5% 1/4W	
			(KV-ES29M90 ONLY)		
R3828	1-249-377-11	CARBON	0.47	5% 1/4W F	
			(KV-ES29M90 ONLY)		
R3839	1-249-429-11	CARBON	10K	5% 1/4W	
			(KV-ES29M90 ONLY)		
R3845	1-249-425-11	CARBON	4.7K	5% 1/4W	
			(KV-ES29M90 ONLY)		
R3846	1-247-831-91	CARBON	1K	5% 1/4W	
			(KV-ES29M90 ONLY)		
R3847	1-247-807-31	CARBON	100	5% 1/4W	
			(KV-ES29M90 ONLY)		
R3848	1-247-831-91	CARBON	1K	5% 1/4W	
			(KV-ES29M90 ONLY)		
R3849	1-249-377-11	CARBON	0.47	5% 1/4W F	
			(KV-ES29M90 ONLY)		
R3852	1-249-441-11	CARBON	100K	5% 1/4W	
			(KV-ES29M90 ONLY)		
R3854	1-249-429-11	CARBON	10K	5% 1/4W	
			(KV-ES29M90 ONLY)		

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*	A-1343-742-A	D1 BOARD MOUNTED	
		**********	
	4-027-606-01	HEAT SINK (TO-220 TYPE)	
	4-382-854-11	SCREW (M3X10), P, SW (+)	
		<CAPACITOR>	
C6101	1-107-714-11	ELECT	10MF 20% 50V
C6102	1-109-953-11	ELECT	2.2MF 20% 50V
C6103	1-107-714-11	ELECT	10MF 20% 50V
C6104	1-126-965-11	ELECT	22MF 20% 50V
C6105	1-104-665-11	ELECT	100MF 20% 25V

REF. NO.	PART NO.	DESCRIPTION			REMARK
C6106	1-163-809-11	CERAMIC CHIP	0.047MF	10% 25V	
C6108	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C6109	1-126-967-11	ELECT	47MF	20% 50V	
C6112	1-163-037-11	CERAMIC CHIP	0.022MF	10% 50V	
C6113	1-137-493-11	FILM	0.0047MF	5% 630V	
C6114	1-107-909-11	ELECT	47MF	20% 50V	
C6115	1-163-005-11	CERAMIC CHIP	470PF	10% 50V	
C6116	1-163-275-11	CERAMIC CHIP	0.001MF	5% 50V	
C6117	1-163-275-11	CERAMIC CHIP	0.001MF	5% 50V	
C6118	1-107-909-11	ELECT	47MF	20% 16V	
C6120	1-163-809-11	CERAMIC CHIP	0.047MF	10% 25V	
C6121	1-126-963-11	ELECT	4.7MF	20% 50V	
C6122	1-126-967-11	ELECT	47MF	20% 50V	
C6123	1-163-275-11	CERAMIC CHIP	0.001MF	5% 50V	
C6125	1-104-664-11	ELECT	47MF	20% 16V	
C6127	1-163-021-91	CERAMIC CHIP	0.01MF	10% 50V	
C6128	1-163-021-91	CERAMIC CHIP	0.01MF	10% 50V	
C6129	1-126-964-11	ELECT	10MF	20% 50V	
C6131	1-126-964-11	ELECT	10MF	20% 50V	
C6133	1-137-194-81	MYLAR	0.47MF	5% 50V	
C6136	1-129-716-00	FILM	0.015MF	5% 630V	
C6138	1-126-968-11	ELECT	100MF	20% 50V	
C6139	1-107-902-11	ELECT	1MF	20% 50V	
C6140	1-126-960-11	ELECT	1MF	20% 50V	
C6201	1-126-967-11	ELECT	47MF	20% 50V	
C6202	1-126-967-11	ELECT	47MF	20% 50V	
C6203	1-126-967-11	ELECT	47MF	20% 50V	
C6204	1-163-021-91	CERAMIC CHIP	0.01MF	10% 50V	
C6205	1-163-021-91	CERAMIC CHIP	0.01MF	10% 50V	
C6206	1-126-964-11	ELECT	10MF	20% 50V	
C6207	1-126-967-11	ELECT	47MF	20% 50V	
C6208	1-126-967-11	ELECT	47MF	20% 50V	
C6209	1-163-133-00	CERAMIC CHIP	470PF	5% 50V	
C6210	1-163-009-11	CERAMIC CHIP	0.001MF	10% 50V	
C6211	1-126-964-11	ELECT	10MF	20% 50V	
C6212	1-164-222-11	CERAMIC CHIP	0.22MF	25V	
C6350	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C6351	1-126-967-11	ELECT	47MF	20% 50V	
C6353	1-163-251-11	CERAMIC CHIP	100PF	5% 50V	
C6355	1-163-251-11	CERAMIC CHIP	100PF	5% 50V	
C6356	1-163-809-11	CERAMIC CHIP	0.047MF	10% 25V	
C6358	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C6361	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C6362	1-164-182-11	CERAMIC CHIP	0.0033MF	10% 50V	
C6365	1-163-809-11	CERAMIC CHIP	0.047MF	10% 25V	
C6376	1-104-664-11	ELECT	47MF	20% 16V	
C6377	1-128-551-11	ELECT	22MF	20% 25V	
C6378	1-115-339-11	CERAMIC CHIP	0.1MF	10% 50V	
C6380	1-136-495-11	MYLAR	0.068MF	5% 50V	
C6381	1-126-964-11	ELECT	10MF	20% 50V	
C6385	1-104-664-11	ELECT	47MF	20% 25V	
C6386	1-104-664-11	ELECT	47MF	20% 25V	
C6388	1-126-964-11	ELECT	10MF	20% 50V	
C6392	1-104-664-11	ELECT	47MF	20% 25V	
C6409	1-126-963-11	ELECT	4.7MF	20% 50V	

D1

REF. NO.	PART NO.	DESCRIPTION	REMARK
		<CONNECTOR>	
CN6100	1-793-498-11	CONNECTOR, BOARD TO BOARD 50P	
CN6101*	1-564-525-11	PLUG, CONNECTOR 10P	
CN6103*	1-564-518-11	PLUG, CONNECTOR 3P	
CN6104*	1-564-523-11	PLUG, CONNECTOR 8P	
		<DIODE>	
D6101	8-719-510-02	DIODE D1NS4	
D6102	8-719-510-02	DIODE D1NS4	
D6103	8-719-063-73	DIODE D1NL20U-TR	
D6104	8-719-911-19	DIODE 1SS119-25	
D6105	8-719-109-60	DIODE RD2.7ESB2	
D6106	8-719-510-02	DIODE D1NS4	
D6108	8-719-911-19	DIODE 1SS119-25	
D6110	8-719-987-87	DIODE ERA85-009	
D6133	8-719-911-19	DIODE 1SS119-25	
D6134	8-719-911-19	DIODE 1SS119-25	
D6201	8-719-109-88	DIODE RD5.6ESB1	
D6210	8-719-109-88	DIODE RD5.6ESB1	
D6350	8-719-914-43	DIODE DAN202K	
D6351	8-719-914-43	DIODE DAN202K	
D6355	8-719-914-43	DIODE DAN202K	
D6404	8-719-914-43	DIODE DAN202K	
		<IC>	
IC6101	8-752-053-21	IC CXA1211M	
IC6102	8-759-450-95	IC LM393N	
IC6103	8-759-450-95	IC LM393N	
IC6104	8-759-803-42	IC LA6500-FA	
IC6105	8-759-450-95	IC LM393N	
IC6106	8-759-198-31	IC UPC1093J-1-T	
IC6108	8-759-567-08	IC MB88141APF-ER	
IC6201	8-759-183-37	IC CA0007AD	
IC6202	8-759-135-80	IC UPC358C	
IC6351	8-759-450-95	IC LM393N	
IC6353	8-759-231-53	IC TA7805S	
IC6354	8-759-325-48	IC CA0005AD	
IC6356	8-759-822-38	IC LA6510	
		<CHIP CONDUCTOR>	
JR6101	1-216-296-91	SHORT 0	
JR6102	1-216-296-91	SHORT 0	
JR6103	1-216-296-91	SHORT 0	
JR6104	1-216-295-91	SHORT 0	
JR6105	1-216-296-91	SHORT 0	
JR6106	1-216-296-91	SHORT 0	
JR6107	1-216-296-91	SHORT 0	
JR6108	1-216-296-91	SHORT 0	
JR6109	1-216-296-91	SHORT 0	
JR6110	1-216-296-91	SHORT 0	
JR6111	1-216-296-91	SHORT 0	
JR6112	1-216-296-91	SHORT 0	
JR6113	1-216-296-91	SHORT 0	
JR6114	1-216-296-91	SHORT 0	
JR6115	1-216-296-91	SHORT 0	
		<COIL>	
L6101	1-416-920-11	INDUCTOR 10MMH	
L6102	1-406-989-21	INDUCTOR 10MMH	
		<IC LINK>	
PS6101	1-533-589-31	LINK, IC	
		<TRANSISTOR>	
Q6103	8-729-046-33	TRANSISTOR IRF720-LF49	
Q6104	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q6105	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q6106	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q6107	8-729-140-93	TRANSISTOR 2SB733-34	
Q6108	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q6118	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q6124	8-729-422-33	TRANSISTOR 2SD601A-Q-TX	
Q6125	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q6126	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q6128	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q6201	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q6202	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q6203	8-729-422-33	TRANSISTOR 2SD601A-Q-TX	
Q6350	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q6356	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q6405	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q6455	8-729-230-49	TRANSISTOR 2SC2712-YG	
		<RESISTOR>	
R6101	1-216-025-91	RES,CHIP 100 5% 1/10W	
R6103	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R6104	1-216-065-91	RES,CHIP 4.7K 5% 1/10W	
R6105	1-208-798-11	METAL CHIP 4.7K 0.50% 1/10W	
R6106	1-208-798-11	METAL CHIP 4.7K 0.50% 1/10W	
R6107	1-216-057-00	RES,CHIP 2.2K 5% 1/10W	
R6108	1-216-073-00	RES,CHIP 10K 5% 1/10W	
R6109	1-216-073-00	RES,CHIP 10K 5% 1/10W	
R6110	1-216-295-91	SHORT 0	
R6112	1-208-840-11	METAL CHIP 270K 0.50% 1/10W	
R6113	1-216-089-91	RES,CHIP 47K 5% 1/10W	
R6114	1-208-806-11	METAL CHIP 10K 0.50% 1/10W	
R6115	1-208-814-91	METAL CHIP 22K 0.50% 1/10W	
R6116	1-216-057-00	RES,CHIP 2.2K 5% 1/10W	
R6117	1-208-782-11	METAL CHIP 1K 0.50% 1/10W	
R6118	1-208-810-11	METAL CHIP 15K 0.50% 1/10W	
R6119	1-208-796-11	METAL CHIP 3.9K 0.50% 1/10W	
R6120	1-208-806-11	METAL CHIP 10K 0.50% 1/10W	
R6121	1-216-490-11	METAL OXIDE 39K 5% 3W F	
R6122	1-216-295-91	SHORT 0	
R6123	1-208-782-11	METAL CHIP 1K 0.50% 1/10W	
R6124	1-208-808-11	METAL CHIP 12K 0.50% 1/10W	

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REF. NO.	PART NO.	DESCRIPTION			REMARK
R6125	1-216-057-00	RES,CHIP	2.2K	5% 1/10W	
R6126	1-208-798-11	METAL CHIP	4.7K	0.50% 1/10W	
R6127	1-208-832-11	METAL CHIP	120K	0.50% 1/10W	
R6128	1-208-838-91	METAL CHIP	220K	0.50% 1/10W	
R6129	1-216-353-00	METAL OXIDE	2.2	5% 1W	F
R6130	1-216-073-00	RES,CHIP	10K	5% 1/10W	
R6131	1-208-820-11	METAL CHIP	39K	0.50% 1/10W	
R6133	1-208-812-11	METAL CHIP	18K	0.50% 1/10W	
R6134	1-208-806-11	METAL CHIP	10K	0.50% 1/10W	
R6135	1-216-073-00	RES,CHIP	10K	5% 1/10W	
R6136	1-260-099-11	CARBON	1K	5% 1/2W	
R6137	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R6138	1-208-798-11	METAL CHIP	4.7K	0.50% 1/10W	
R6139	1-208-804-11	METAL CHIP	8.2K	0.50% 1/10W	
R6140	1-216-077-91	RES,CHIP	15K	5% 1/10W	
R6141	1-208-830-11	METAL CHIP	100K	0.50% 1/10W	
R6142	1-208-806-11	METAL CHIP	10K	0.50% 1/10W	
R6143	1-208-800-11	METAL CHIP	5.6K	0.50% 1/10W	
R6144	1-208-840-11	METAL CHIP	270K	0.50% 1/10W	
R6146	1-208-822-11	METAL CHIP	47K	0.50% 1/10W	
R6149	1-208-824-11	METAL CHIP	56K	0.50% 1/10W	
R6150	1-208-806-11	METAL CHIP	10K	0.50% 1/10W	
R6151	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R6152	1-216-081-00	RES,CHIP	22K	5% 1/10W	
R6153	1-216-105-91	RES,CHIP	220K	5% 1/10W	
R6154	1-208-796-11	METAL CHIP	3.9K	0.50% 1/10W	
R6155	1-208-822-11	METAL CHIP	47K	0.50% 1/10W	
R6156	1-216-077-91	RES,CHIP	15K	5% 1/10W	
R6157	1-216-089-91	RES,CHIP	47K	5% 1/10W	
R6158	1-216-689-11	RES,CHIP	39K	5% 1/10W	
R6159	1-208-798-11	METAL CHIP	4.7K	0.50% 1/10W	
R6161	1-208-818-11	METAL CHIP	33K	0.50% 1/10W	
R6162	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R6168	1-216-065-91	RES,CHIP	4.7K	5% 1/10W	
R6169	1-208-806-11	METAL CHIP	10K	0.50% 1/10W	
R6170	1-216-037-00	RES,CHIP	330	5% 1/10W	
R6171	1-216-113-00	RES,CHIP	470K	5% 1/10W	
R6172	1-216-105-91	RES,CHIP	220K	5% 1/10W	
R6173	1-216-097-91	RES,CHIP	100K	5% 1/10W	
R6174	1-216-079-00	RES,CHIP	18K	5% 1/10W	
R6175	1-208-816-11	METAL CHIP	27K	0.50% 1/10W	
R6176	1-249-389-11	CARBON	4.7	5% 1/4W	F
R6177	1-216-065-91	RES,CHIP	4.7K	5% 1/10W	
R6178	1-249-389-11	CARBON	4.7	5% 1/4W	F
R6179	1-216-101-00	RES,CHIP	150K	5% 1/10W	
R6180	1-216-057-00	RES,CHIP	2.2K	5% 1/10W	
R6181	1-216-105-91	RES,CHIP	220K	5% 1/10W	
R6190	1-216-057-00	RES,CHIP	2.2K	5% 1/10W	
R6192	1-216-295-91	SHORT	0		
R6195	1-208-806-11	METAL CHIP	10K	0.50% 1/10W	
R6196	1-249-377-11	CARBON	0.47	5% 1/4W	F
R6200	1-208-836-11	METAL CHIP	180K	0.50% 1/10W	
R6201	1-247-750-11	CARBON	680	5% 1/2W	F
R6202	1-216-061-00	RES,CHIP	3.3K	5% 1/10W	
R6203	1-215-906-11	METAL OXIDE	15	5% 3W	F
R6204	1-216-057-00	RES,CHIP	2.2K	5% 1/10W	

REF. NO.	PART NO.	DESCRIPTION			REMARK
R6206	1-216-033-00	RES,CHIP	220	5% 1/10W	
R6207	1-208-794-11	METAL CHIP	3.3K	0.50% 1/10W	
R6208	1-208-806-11	METAL CHIP	10K	0.50% 1/10W	
R6209	1-216-099-00	RES,CHIP	120K	5% 1/10W	
R6210	1-216-057-00	RES,CHIP	2.2K	5% 1/10W	
R6211	1-216-073-00	RES,CHIP	10K	5% 1/10W	
R6212	1-216-057-00	RES,CHIP	2.2K	5% 1/10W	
R6213	1-216-097-91	RES,CHIP	100K	5% 1/10W	
R6215	1-216-089-91	RES,CHIP	47K	5% 1/10W	
R6216	1-216-065-91	RES,CHIP	4.7K	5% 1/10W	
R6217	1-216-073-00	RES,CHIP	10K	5% 1/10W	
R6218	1-208-836-11	METAL CHIP	180K	0.50% 1/10W	
R6219	1-208-782-11	METAL CHIP	1K	0.50% 1/10W	
R6220	1-208-822-11	METAL CHIP	47K	0.50% 1/10W	
R6221	1-208-822-11	METAL CHIP	47K	0.50% 1/10W	
R6222	1-216-295-91	SHORT	0		
R6223	1-216-295-91	SHORT	0		
R6224	1-208-824-11	METAL CHIP	56K	0.50% 1/10W	
R6225	1-208-824-11	METAL CHIP	56K	0.50% 1/10W	
R6226	1-216-033-00	RES,CHIP	220	5% 1/10W	
R6227	1-216-033-00	RES,CHIP	220	5% 1/10W	
R6324	1-216-017-91	RES,CHIP	47	5% 1/10W	
R6325	1-216-017-91	RES,CHIP	47	5% 1/10W	
R6326	1-208-808-11	METAL CHIP	12K	0.50% 1/10W	
R6327	1-216-067-00	RES,CHIP	5.6K	5% 1/10W	
R6350	1-216-067-00	RES,CHIP	5.6K	5% 1/10W	
R6357	1-216-057-00	RES,CHIP	2.2K	5% 1/10W	
R6359	1-216-097-91	RES,CHIP	100K	5% 1/10W	
R6360	1-216-073-00	RES,CHIP	10K	5% 1/10W	
R6361	1-216-097-91	RES,CHIP	100K	5% 1/10W	
R6367	1-208-808-11	METAL CHIP	12K	0.50% 1/10W	
R6368	1-208-810-11	METAL CHIP	15K	0.50% 1/10W	
R6375	1-216-041-00	RES,CHIP	470	5% 1/10W	
R6378	1-215-473-00	METAL	150K	1% 1/4W	
R6379	1-216-295-91	SHORT	0		
R6382	1-208-830-11	METAL CHIP	100K	0.50% 1/10W	
R6385	1-216-295-91	SHORT	0		
R6386	1-208-830-11	METAL CHIP	100K	0.50% 1/10W	
R6391	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R6394	1-216-069-00	RES,CHIP	6.8K	5% 1/10W	
R6413	1-208-806-11	METAL CHIP	10K	0.50% 1/10W	
R6416	1-208-808-11	METAL CHIP	12K	0.50% 1/10W	
R6418	1-216-113-00	RES,CHIP	470K	5% 1/10W	
R6419	1-216-097-91	RES,CHIP	100K	5% 1/10W	
R6420	1-216-111-00	RES,CHIP	390K	5% 1/10W	
R6433	1-216-097-91	RES,CHIP	100K	5% 1/10W	
R6438	1-215-437-00	METAL	4.7K	1% 1/4W	
R6442	1-216-057-00	RES,CHIP	2.2K	5% 1/10W	
R6456	1-216-097-91	RES,CHIP	100K	5% 1/10W	
R6457	1-208-814-91	METAL CHIP	22K	0.50% 1/10W	
R6458	1-216-089-91	RES,CHIP	47K	5% 1/10W	
R6459	1-216-057-00	RES,CHIP	2.2K	5% 1/10W	
RV6100	1-238-786-11	RES,ADJ, CEMENT	5K		

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REF. NO.	PART NO.	DESCRIPTION			REMARK
*	A-1343-743-A	E BOARD MOUNTED			
		**********			
	1-900-251-21	CONNECTOR ASSY 4P			
		<CAPACITOR>			
C4301	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4308	1-126-960-11	ELECT	1MF	20%	50V
C4309	1-164-489-11	CERAMIC CHIP	0.22MF	10%	16V
C4316	1-104-664-11	ELECT	47MF	20%	25V
C4317	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4318	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4319	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4320	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4321	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4322	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4324	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4325	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C4326	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4327	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4328	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4329	1-126-963-11	ELECT	4.7MF	20%	50V
C4330	1-136-244-11	FILM	0.1MF	5%	50V
C4331	1-126-959-11	ELECT	0.47MF	20%	50V
C4332	1-136-161-00	MYLAR	0.047MF	5%	50V
C4333	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4334	1-126-967-11	ELECT	47MF	20%	50V
C4336	1-126-967-11	ELECT	47MF	20%	50V
C4338	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4339	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C4340	1-126-967-11	ELECT	47MF	20%	50V
C4341	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C4342	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C4343	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4344	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C4345	1-126-967-11	ELECT	47MF	20%	50V
C4346	1-164-346-11	CERAMIC CHIP	1MF		16V
C4347	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4348	1-164-346-11	CERAMIC CHIP	1MF		16V
C4349	1-164-346-11	CERAMIC CHIP	1MF		16V
C4350	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4351	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C4352	1-126-967-11	ELECT	47MF	20%	50V
C4353	1-107-823-11	CERAMIC CHIP	0.47MF	10%	16V
C4354	1-107-823-11	CERAMIC CHIP	0.47MF	10%	16V
C4355	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4356	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4357	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4358	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4359	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C4360	1-126-963-11	ELECT	4.7MF	20%	50V
C4362	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4363	1-126-967-11	ELECT	47MF	20%	50V
C4364	1-126-967-11	ELECT	47MF	20%	50V
C4366	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C4367	1-104-760-11	CERAMIC CHIP	0.047MF	10%	50V
C4369	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4370	1-126-967-11	ELECT	47MF	20%	50V
C4371	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4378	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C4800	1-136-165-00	MYLAR	0.1MF	5%	50V
C4801	1-136-161-00	MYLAR	0.047MF	5%	50V
C4802	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C4803	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C4804	1-126-967-11	ELECT	47MF	20%	50V
C4805	1-126-964-11	ELECT	10MF	20%	50V
C4806	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C4808	1-136-165-00	MYLAR	0.1MF	5%	50V
C4809	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C4811	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C4812	1-126-967-11	ELECT	47MF	20%	50V
C4813	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C4814	1-126-967-11	ELECT	47MF	20%	50V
C4816	1-163-227-11	CERAMIC CHIP	10PF	5%	50V
C4817	1-126-967-11	ELECT	47MF	20%	50V
C4818	1-126-961-11	ELECT	2.2MF	20%	50V
C4820	1-107-909-11	ELECT	47MF	20%	50V
C4821	1-107-909-11	ELECT	47MF	20%	16V
C4822	1-107-909-11	ELECT	47MF	20%	16V
C4823	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C4824	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C4825	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C4833	1-126-964-11	ELECT	10MF	20%	50V
C4834	1-126-933-11	ELECT	100MF	20%	16V
		<CONNECTOR>			
CN4101	1-793-497-11	CONNECTOR, BOARD TO BOARD 40P			
CN4500 *	1-564-512-11	PLUG, CONNECTOR 9P			
CN4502 *	1-564-506-11	PLUG, CONNECTOR 3P			
		<DIODE>			
D4303	8-719-109-72	DIODE RD3.9ESB2			
D4304	8-719-977-22	DIODE DTZ9.1			
D4305	8-719-977-22	DIODE DTZ9.1			
D4311	8-719-914-43	DIODE DAN202K			
D4312	8-719-914-43	DIODE DAN202K			
D4313	8-719-401-63	DIODE MA3062M-TX			
D4314	8-719-911-19	DIODE 1SS119-25			
D4800	8-719-914-43	DIODE DAN202K			
D4801	8-719-914-43	DIODE DAN202K			
D4802	8-719-109-81	DIODE RD4.7ESB2			
D4803	8-719-911-19	DIODE 1SS119-25			
D4804	8-719-911-19	DIODE 1SS119-25			
D4807	8-719-914-43	DIODE DAN202K			
D4808	8-719-914-43	DIODE DAN202K			
D4809	8-719-914-43	DIODE DAN202K			
D4811	8-719-109-54	DIODE RD2.2ESB2			
D4813	8-719-914-43	DIODE DAN202K			
D4814	8-719-914-43	DIODE DAN202K			
D4816	8-719-911-19	DIODE 1SS119-25			

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REF. NO.	PART NO.	DESCRIPTION		REMARK
		<FERRITE BEAD>		
FB4387	1-216-295-91	SHORT	0	
FB4388	1-216-295-91	SHORT	0	
FB4389	1-216-295-91	SHORT	0	
		<IC>		
IC4301	8-752-090-87	IC CXA2100AQ		
IC4800	8-759-450-95	IC LM393N		
IC4801	8-759-450-95	IC LM393N		
IC4802	8-759-701-50	IC NJM3404AD		
IC4803	8-759-135-80	IC UPC358C		
		<CHIP CONDUCTOR>		
JR4301	1-216-295-91	SHORT	0	
		<COIL>		
L4301	1-412-029-11	INDUCTOR CHIP	10UH	
L4302	1-412-029-11	INDUCTOR CHIP	10UH	
L4303	1-412-029-11	INDUCTOR CHIP	10UH	
L4304	1-412-029-11	INDUCTOR CHIP	10UH	
L4305	1-412-029-11	INDUCTOR CHIP	10UH	
L4306	1-412-029-11	INDUCTOR CHIP	10UH	
L4308	1-412-031-11	INDUCTOR CHIP	47UH	
L4309	1-412-031-11	INDUCTOR CHIP	47UH	
L4311	1-412-002-31	INDUCTOR CHIP	4.7UH	
		<TRANSISTOR>		
Q4301	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q4302	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q4303	8-729-120-28	TRANSISTOR 2SC1623-L5L6		
Q4304	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q4307	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q4308	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q4310	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q4315	1-801-806-11	TRANSISTOR DTC144EKA-T146		
Q4316	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q4317	8-729-900-53	TRANSISTOR DTC114EK		
Q4319	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q4320	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q4321	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q4322	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q4800	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q4801	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q4802	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q4803	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q4804	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q4805	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q4806	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q4807	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q4808	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q4809	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q4810	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q4811	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q4812	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q4813	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q4814	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q4815	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q4816	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q4817	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q4818	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q4820	8-729-230-49	TRANSISTOR 2SC2712-YG		
Q4821	1-801-806-11	TRANSISTOR DTC144EKA-T146		
Q4822	8-729-230-49	TRANSISTOR 2SC2712-YG		
		<RESISTOR>		
R4301	1-216-025-91	RES,CHIP	100	5% 1/10W
R4302	1-216-025-91	RES,CHIP	100	5% 1/10W
R4303	1-216-025-91	RES,CHIP	100	5% 1/10W
R4304	1-216-025-91	RES,CHIP	100	5% 1/10W
R4305	1-216-025-91	RES,CHIP	100	5% 1/10W
R4306	1-216-025-91	RES,CHIP	100	5% 1/10W
R4307	1-216-025-91	RES,CHIP	100	5% 1/10W
R4308	1-216-295-91	SHORT	0	
R4310	1-216-295-91	SHORT	0	
R4312	1-216-295-91	SHORT	0	
R4313	1-216-065-91	RES,CHIP	4.7K	5% 1/10W
R4314	1-216-057-00	RES,CHIP	2.2K	5% 1/10W
R4316	1-216-069-00	RES,CHIP	6.8K	5% 1/10W
R4317	1-216-081-00	RES,CHIP	22K	5% 1/10W
R4318	1-208-804-11	METAL CHIP	8.2K	0.50% 1/10W
R4319	1-208-804-11	METAL CHIP	8.2K	0.50% 1/10W
R4320	1-208-790-11	METAL CHIP	2.2K	0.50% 1/10W
R4321	1-216-298-00	RES,CHIP	2.2	5% 1/10W
R4323	1-208-814-91	METAL CHIP	22K	0.50% 1/10W
R4324	1-208-798-11	METAL CHIP	4.7K	0.50% 1/10W
R4325	1-208-818-11	METAL CHIP	33K	0.50% 1/10W
R4326	1-208-826-11	METAL CHIP	68K	0.50% 1/10W
R4327	1-208-822-11	METAL CHIP	47K	0.50% 1/10W
R4329	1-208-782-11	METAL CHIP	1K	0.50% 1/10W
R4330	1-216-089-91	RES,CHIP	47K	5% 1/10W
R4331	1-216-025-91	RES,CHIP	100	5% 1/10W
R4332	1-216-025-91	RES,CHIP	100	5% 1/10W
R4333	1-216-025-91	RES,CHIP	100	5% 1/10W
R4334	1-216-049-91	RES,CHIP	1K	5% 1/10W
R4335	1-216-025-91	RES,CHIP	100	5% 1/10W
R4336	1-216-025-91	RES,CHIP	100	5% 1/10W
R4337	1-216-025-91	RES,CHIP	100	5% 1/10W
R4338	1-216-041-00	RES,CHIP	470	5% 1/10W
R4339	1-216-051-00	RES,CHIP	1.2K	5% 1/10W
R4341	1-216-295-91	SHORT	0	
R4343	1-216-025-91	RES,CHIP	100	5% 1/10W
R4344	1-216-025-91	RES,CHIP	100	5% 1/10W
R4345	1-216-075-00	RES,CHIP	12K	5% 1/10W
R4346	1-208-812-11	METAL CHIP	18K	0.50% 1/10W
R4347	1-216-025-91	RES,CHIP	100	5% 1/10W
R4348	1-216-025-91	RES,CHIP	100	5% 1/10W
R4349	1-216-041-00	RES,CHIP	470	5% 1/10W
R4350	1-216-025-91	RES,CHIP	100	5% 1/10W
R4351	1-216-081-00	RES,CHIP	22K	5% 1/10W
R4352	1-216-041-00	RES,CHIP	470	5% 1/10W

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REF. NO.	PART NO.	DESCRIPTION			REMARK
R4353	1-216-051-00	RES,CHIP	1.2K	5%	1/10W
R4354	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R4355	1-216-049-91	RES,CHIP	1K	5%	1/10W
R4356	1-216-049-91	RES,CHIP	1K	5%	1/10W
R4357	1-216-073-00	RES,CHIP	10K	5%	1/10W
R4358	1-216-071-00	RES,CHIP	8.2K	5%	1/10W
R4359	1-216-041-00	RES,CHIP	470	5%	1/10W
R4360	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R4361	1-216-133-00	RES,CHIP	3.3M	5%	1/10W
R4363	1-216-025-91	RES,CHIP	100	5%	1/10W
R4365	1-216-025-91	RES,CHIP	100	5%	1/10W
R4366	1-216-025-91	RES,CHIP	100	5%	1/10W
R4367	1-216-025-91	RES,CHIP	100	5%	1/10W
R4369	1-216-025-91	RES,CHIP	100	5%	1/10W
R4370	1-216-049-91	RES,CHIP	1K	5%	1/10W
R4372	1-216-049-91	RES,CHIP	1K	5%	1/10W
R4373	1-216-295-91	SHORT	0		
R4374	1-216-025-91	RES,CHIP	100	5%	1/10W
R4375	1-216-049-91	RES,CHIP	1K	5%	1/10W
R4376	1-216-025-91	RES,CHIP	100	5%	1/10W
R4377	1-216-049-91	RES,CHIP	1K	5%	1/10W
R4380	1-216-073-00	RES,CHIP	10K	5%	1/10W
R4381	1-216-129-00	RES,CHIP	2.2M	5%	1/10W
R4382	1-216-073-00	RES,CHIP	10K	5%	1/10W
R4383	1-216-079-00	RES,CHIP	18K	5%	1/10W
R4384	1-216-025-91	RES,CHIP	100	5%	1/10W
R4387	1-216-295-91	SHORT	0		
R4388	1-216-295-91	SHORT	0		
R4389	1-216-295-91	SHORT	0		
R4395	1-216-295-91	SHORT	0		
R4396	1-216-295-91	SHORT	0		
R4397	1-216-295-91	SHORT	0		
R4401	1-216-105-91	RES,CHIP	220K	5%	1/10W
R4408	1-216-025-91	RES,CHIP	100	5%	1/10W
R4409	1-216-073-00	RES,CHIP	10K	5%	1/10W
R4410	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R4411	1-216-073-00	RES,CHIP	10K	5%	1/10W
R4412	1-216-097-91	RES,CHIP	100K	5%	1/10W
R4518	1-216-025-91	RES,CHIP	100	5%	1/10W
R4519	1-216-073-00	RES,CHIP	10K	5%	1/10W
R4520	1-216-025-91	RES,CHIP	100	5%	1/10W
R4521	1-216-025-91	RES,CHIP	100	5%	1/10W
R4800	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R4801	1-216-049-91	RES,CHIP	1K	5%	1/10W
R4802	1-216-073-00	RES,CHIP	10K	5%	1/10W
R4803	1-216-049-91	RES,CHIP	1K	5%	1/10W
R4804	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R4805	1-208-792-11	METAL CHIP	2.7K	0.50%	1/10W
R4806	1-208-792-11	METAL CHIP	2.7K	0.50%	1/10W
R4807	1-216-049-91	RES,CHIP	1K	5%	1/10W
R4809	1-216-073-00	RES,CHIP	10K	5%	1/10W
R4810	1-208-814-91	METAL CHIP	22K	0.50%	1/10W
R4811	1-208-814-91	METAL CHIP	22K	0.50%	1/10W
R4812	1-216-295-91	SHORT	0		
R4813	1-216-089-91	RES,CHIP	47K	5%	1/10W
R4814	1-216-097-91	RES,CHIP	100K	5%	1/10W
R4815	1-216-097-91	RES,CHIP	100K	5%	1/10W
R4816	1-216-073-00	RES,CHIP	10K	5%	1/10W

REF. NO.	PART NO.	DESCRIPTION			REMARK
R4817	1-208-848-11	METAL CHIP	560K	0.50%	1/10W
R4818	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R4819	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R4820	1-216-073-00	RES,CHIP	10K	5%	1/10W
R4821	1-216-073-00	RES,CHIP	10K	5%	1/10W
R4822	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R4823	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R4824	1-216-073-00	RES,CHIP	10K	5%	1/10W
R4825	1-216-073-00	RES,CHIP	10K	5%	1/10W
R4826	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R4827	1-216-295-91	SHORT	0		
R4828	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R4829	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R4831	1-208-794-11	METAL CHIP	3.3K	0.50%	1/10W
R4832	1-208-822-11	METAL CHIP	47K	0.50%	1/10W
R4833	1-208-822-11	METAL CHIP	47K	0.50%	1/10W
R4834	1-208-790-11	METAL CHIP	2.2K	0.50%	1/10W
R4835	1-208-790-11	METAL CHIP	2.2K	0.50%	1/10W
R4836	1-208-822-11	METAL CHIP	47K	0.50%	1/10W
R4837	1-208-822-11	METAL CHIP	47K	0.50%	1/10W
R4838	1-208-830-11	METAL CHIP	100K	0.50%	1/10W
R4839	1-208-804-11	METAL CHIP	8.2K	0.50%	1/10W
R4840	1-216-295-91	SHORT	0		
R4841	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R4842	1-208-822-11	METAL CHIP	47K	0.50%	1/10W
R4843	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R4844	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R4845	1-208-830-11	METAL CHIP	100K	0.50%	1/10W
R4846	1-216-295-91	SHORT	0		
R4847	1-216-073-00	RES,CHIP	10K	5%	1/10W
R4848	1-216-073-00	RES,CHIP	10K	5%	1/10W
R4849	1-216-085-00	RES,CHIP	33K	5%	1/10W
R4850	1-216-097-91	RES,CHIP	100K	5%	1/10W
R4851	1-216-053-00	RES,CHIP	1.5K	5%	1/10W
R4852	1-216-081-00	RES,CHIP	22K	5%	1/10W
R4853	1-216-053-00	RES,CHIP	1.5K	5%	1/10W
R4854	1-216-067-00	RES,CHIP	5.6K	5%	1/10W
R4855	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R4856	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R4857	1-208-798-11	METAL CHIP	4.7K	0.50%	1/10W
R4859	1-208-802-11	METAL CHIP	6.8K	0.50%	1/10W
R4860	1-208-778-11	METAL CHIP	680	0.50%	1/10W
R4861	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R4862	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R4864	1-208-792-11	METAL CHIP	2.7K	0.50%	1/10W
R4865	1-208-762-11	METAL CHIP	150	0.50%	1/10W
R4866	1-216-089-91	RES,CHIP	47K	5%	1/10W
R4869	1-208-814-91	METAL CHIP	22K	0.50%	1/10W
R4871	1-208-814-91	METAL CHIP	22K	0.50%	1/10W
R4872	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R4874	1-216-295-91	SHORT	0		
R4875	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R4877	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R4878	1-208-834-11	METAL CHIP	150K	0.50%	1/10W
R4879	1-216-105-91	RES,CHIP	220K	5%	1/10W
R4881	1-216-295-91	SHORT	0		
R4884	1-208-822-11	METAL CHIP	47K	0.50%	1/10W

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

E **E1** **F1** **F2** **H1**

REF. NO.	PART NO.	DESCRIPTION			REMARK
R4886	1-208-826-11	METAL CHIP	68K	0.50%	1/10W
R4892	1-216-295-91	SHORT	0		
R4894	1-216-073-00	RES,CHIP	10K	5%	1/10W
R4895	1-216-073-00	RES,CHIP	10K	5%	1/10W
		<CRYSTAL>			
X4300	1-767-127-11	VIBRATOR, CERAMIC			
**********					
*	A-1343-817-A	E1 BOARD MOUNTED			
		**********			
		<CAPACITOR>			
C4901	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C4902	1-126-964-11	ELECT	10MF	20%	50V
C4903	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C4904	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
		<CONNECTOR>			
CN4901*	1-564-507-11	PLUG, CONNECTOR 4P			
		<TRANSISTOR>			
Q4901	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q4902	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q4903	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R			
Q4904	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R			
		<RESISTOR>			
R4901	1-216-049-91	RES,CHIP	1K	5%	1/10W
R4902	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R4903	1-208-818-11	METAL CHIP	33K	0.50%	1/10W
R4904	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R4905	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R4906	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R4907	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
**********					
*	A-1241-402-A	F1 BOARD MOUNTED			
		**********			
	1-533-223-11	HOLDER, FUSE			
*	4-374-846-01	COVER, CAPACITOR, CAP TYPE			
		<CAPACITOR>			
C1601 ⚠	1-104-708-11	MYLAR	0.47MF	20%	250V
C1602 ⚠	1-109-835-11	MYLAR	0.68MF	20%	250V
C1603 ⚠	1-117-703-11	CERAMIC	0.0047MF	99%	250V

REF. NO.	PART NO.	DESCRIPTION			REMARK
		<CONNECTOR>			
CN1601*⚠	1-580-843-11	PIN, CONNECTOR (POWER)			
CN1602*⚠	1-580-843-11	PIN, CONNECTOR (POWER)			
CN1603	1-695-915-11	TAB (CONTACT)			
CN1604	1-695-915-11	TAB (CONTACT)			
		<FUSE>			
F1601	1-532-299-00	FUSE, TIME-LAG 5A/250V			
		<FERRITE BEAD>			
FB1601	1-410-397-21	FERRITE	1.1UH		
FB1602	1-410-397-21	FERRITE	1.1UH		
FB1603	1-410-397-21	FERRITE	1.1UH		
FB1604	1-410-397-21	FERRITE	1.1UH		
		<RESISTOR>			
R1601 ⚠	1-202-719-00	SOLID	1M	10%	1/2W
		<TRANSFORMER>			
T1601	1-433-900-11	TRANSFORMER, LINE FILTER			
T1602	1-433-900-11	TRANSFORMER, LINE FILTER			
		<VARISTOR>			
VDR161	1-803-830-31	VARISTOR (ERZV14D621)			
**********					
*	A-1241-403-A	F2 BOARD MOUNTED			
		**********			
		<CONNECTOR>			
CN1651*	1-580-843-11	PIN, CONNECTOR (POWER)			
CN1652*	1-691-291-11	PIN, CONNECTOR (PC BOARD) 5P			
		<SWITCH>			
S1651 ⚠	1-571-433-21	SWITCH, PUSH (AC POWER)			
**********					
*	A-1372-728-A	H1 BOARD MOUNTED			
		**********			
*	4-055-304-01	HOLDER, LED			
		<CAPACITOR>			
C1910	1-104-664-11	ELECT	47MF	20%	16V
C1911	1-104-664-11	ELECT	47MF	20%	16V
C1912	1-102-824-00	CERAMIC	470PF	5%	50V

H1 H2 H3

REF. NO.	PART NO.	DESCRIPTION			REMARK
		<CONNECTOR>			
CN1901 *	1-564-520-11	PLUG, CONNECTOR 5P			
		<DIODE>			
D1906	8-719-045-19	DIODE SPB-26MVWF			
		<IC>			
IC1901	8-742-134-00	HYB IC SBX1981-51P			
		<TRANSISTOR>			
Q1901	8-729-030-02	TRANSISTOR DTC144ESA			
Q1902	8-729-030-02	TRANSISTOR DTC144ESA			
		<RESISTOR>			
R1911	1-249-411-11	CARBON	330	5%	1/4W
R1913	1-249-429-11	CARBON	10K	5%	1/4W
R1914	1-249-411-11	CARBON	330	5%	1/4W
R1915	1-249-429-11	CARBON	10K	5%	1/4W
R1916	1-249-401-11	CARBON	47	5%	1/4W
R1917	1-247-807-31	CARBON	100	5%	1/4W
R1920	1-247-807-31	CARBON	100	5%	1/4W
R1921	1-247-807-31	CARBON	100	5%	1/4W

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*	A-1372-729-A	H2 BOARD MOUNTED				
		**********				
		<CAPACITOR>				
C1930	1-136-153-00	MYLAR	0.01MF	5%	50V	
C1932	1-136-153-00	MYLAR	0.01MF	5%	50V	
C1935	1-102-824-00	CERAMIC	470PF	5%	50V	
C1938	1-102-824-00	CERAMIC	470PF	5%	50V	
		<CONNECTOR>				
CN1932 *	1-564-509-11	PLUG, CONNECTOR 6P				
CN1934 *	1-564-515-11	PLUG, CONNECTOR 12P				
		<DIODE>				
D1930	8-719-121-26	DIODE RD9.1ESL2				
D1935	8-719-121-26	DIODE RD9.1ESL2				
		<JACK>				
J1931	1-770-786-11	JACK				
J1932	1-537-744-11	TERMINAL, S				
J1933	1-770-329-11	JACK, PIN 3P				

REF. NO.	PART NO.	DESCRIPTION			REMARK
		<COIL>			
L1931	1-408-603-31	INDUCTOR	10UH		
L1932	1-408-603-31	INDUCTOR	10UH		
		<RESISTOR>			
R1933	1-247-895-91	CARBON	470K	5%	1/4W
R1934	1-247-807-31	CARBON	100	5%	1/4W
R1935	1-247-807-31	CARBON	100	5%	1/4W
R1936	1-247-895-91	CARBON	470K	5%	1/4W
R1952	1-249-421-11	CARBON	2.2K	5%	1/4W
		<SWITCH>			
S1931	1-692-431-21	SWITCH, TACTILE			

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*	A-1372-730-A	H3 BOARD MOUNTED				
		**********				
		<CONNECTOR>				
CN1980	*1-564-518-11	PLUG, CONNECTOR 3P				
		<RESISTOR>				
R1970	1-249-416-11	CARBON	820	5%	1/4W	
R1971	1-247-831-91	CARBON	1K	5%	1/4W	
R1972	1-249-418-11	CARBON	1.2K	5%	1/4W	
R1973	1-249-420-11	CARBON	1.8K	5%	1/4W	
R1974	1-247-843-11	CARBON	3.3K	5%	1/4W	
R1975	1-249-427-11	CARBON	6.8K	5%	1/4W	
R1976	1-249-432-11	CARBON	18K	5%	1/4W	
		<SWITCH>				
S1972	1-572-198-11	SWITCH, KEYBOARD				
S1973	1-572-198-11	SWITCH, KEYBOARD				
S1974	1-572-198-11	SWITCH, KEYBOARD				
S1975	1-572-198-11	SWITCH, KEYBOARD				
S1976	1-572-198-11	SWITCH, KEYBOARD				
S1977	1-572-198-11	SWITCH, KEYBOARD				
S1978	1-572-198-11	SWITCH, KEYBOARD				
S1979	1-572-198-11	SWITCH, KEYBOARD				

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J

REF. NO.	PART NO.	DESCRIPTION			REMARK
*	A-1394-965-A	J BOARD COMPLETE			
		**********			
	3-350-679-01	WASHER, FIBER			
		<CAPACITOR>			
C8300	1-107-823-11	CERAMIC CHIP	0.47MF	10%	16V
C8301	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C8302	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C8303	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C8304	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C8305	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C8306	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C8307	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C8308	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C8309	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C8310	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C8311	1-164-346-11	CERAMIC CHIP	1MF		16V
C8312	1-164-346-11	CERAMIC CHIP	1MF		16V
C8313	1-164-346-11	CERAMIC CHIP	1MF		16V
C8314	1-164-346-11	CERAMIC CHIP	1MF		16V
C8315	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C8316	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C8317	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8318	1-164-346-11	CERAMIC CHIP	1MF		16V
C8319	1-164-346-11	CERAMIC CHIP	1MF		16V
C8320	1-117-720-11	CERAMIC CHIP	4.7MF		10V
C8321	1-117-720-11	CERAMIC CHIP	4.7MF		10V
C8322	1-164-346-11	CERAMIC CHIP	1MF		16V
C8323	1-164-346-11	CERAMIC CHIP	1MF		16V
C8324	1-117-720-11	CERAMIC CHIP	4.7MF		10V
C8325	1-126-935-11	ELECT	470MF	20%	16V
C8326	1-107-823-11	CERAMIC CHIP	0.47MF	10%	16V
C8327	1-164-346-11	CERAMIC CHIP	1MF		16V
C8328	1-164-346-11	CERAMIC CHIP	1MF		16V
C8329	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
C8330	1-164-346-11	CERAMIC CHIP	1MF		16V
C8331	1-164-346-11	CERAMIC CHIP	1MF		16V
C8332	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
C8333	1-115-340-11	CERAMIC CHIP	0.22MF	10%	25V
C8334	1-104-664-11	ELECT	47MF	20%	16V
C8335	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8336	1-104-664-11	ELECT	47MF	20%	16V
C8337	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8338	1-164-346-11	CERAMIC CHIP	1MF		16V
C8339	1-164-346-11	CERAMIC CHIP	1MF		16V
C8340	1-107-823-11	CERAMIC CHIP	0.47MF	10%	16V
C8341	1-107-823-11	CERAMIC CHIP	0.47MF	10%	16V
C8342	1-126-964-11	ELECT	10MF	20%	50V
C8343	1-104-664-11	ELECT	47MF	20%	16V
C8344	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8346	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8347	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8348	1-126-968-11	ELECT	100MF	20%	16V
C8349	1-117-720-11	CERAMIC CHIP	4.7MF		10V
C8352	1-107-823-11	CERAMIC CHIP	0.47MF	10%	16V
C8353	1-115-340-11	CERAMIC CHIP	0.22MF	10%	25V
C8354	1-107-823-11	CERAMIC CHIP	0.47MF	10%	16V
C8355	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8356	1-164-346-11	CERAMIC CHIP	1MF		16V
C8357	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8358	1-164-346-11	CERAMIC CHIP	1MF		16V
C8359	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C8360	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8361	1-126-961-11	ELECT	2.2MF	20%	50V
C8362	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8363	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8364	1-104-664-11	ELECT	47MF	20%	16V
C8365	1-104-664-11	ELECT	47MF	20%	16V
C8366	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8367	1-104-664-11	ELECT	47MF	20%	16V
C8368	1-104-664-11	ELECT	47MF	20%	16V
C8369	1-104-664-11	ELECT	47MF	20%	16V
C8370	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8371	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8372	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8373	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C8374	1-164-346-11	CERAMIC CHIP	1MF		16V
C8375	1-126-964-11	ELECT	10MF	20%	50V
C8376	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8381	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8382	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8386	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8390	1-126-963-11	ELECT	4.7MF	20%	50V
C8391	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8392	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8393	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8396	1-107-823-11	CERAMIC CHIP	0.47MF	10%	16V
C8399	1-126-961-11	ELECT	2.2MF	20%	50V
C8401	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8402	1-164-346-11	CERAMIC CHIP	1MF		16V
C8403	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C8406	1-104-664-11	ELECT	47MF	20%	16V
C8407	1-104-664-11	ELECT	47MF	20%	16V
C8408	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8410	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8411	1-117-720-11	CERAMIC CHIP	4.7MF		10V
C8412	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8413	1-117-720-11	CERAMIC CHIP	4.7MF		10V
C8414	1-104-664-11	ELECT	47MF	20%	16V
C8415	1-164-346-11	CERAMIC CHIP	1MF		16V
C8416	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8417	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C8418	1-126-964-11	ELECT	10MF	20%	50V
C8419	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8424	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8425	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C8430	1-117-720-11	CERAMIC CHIP	4.7MF		10V
C8431	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C8432	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C8437	1-126-963-11	ELECT	4.7MF	20%	50V
C8438	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8439	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V

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REF. NO.	PART NO.	DESCRIPTION			REMARK
C8440	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8441	1-164-346-11	CERAMIC CHIP	1MF		16V
C8442	1-117-720-11	CERAMIC CHIP	4.7MF		10V
C8443	1-117-720-11	CERAMIC CHIP	4.7MF		10V
C8444	1-117-720-11	CERAMIC CHIP	4.7MF		10V
C8445	1-164-346-11	CERAMIC CHIP	1MF		16V
C8446	1-104-664-11	ELECT	47MF	20%	16V
C8447	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8448	1-164-690-91	CERAMIC CHIP	0.0022MF	5%	50V
C8450	1-107-823-11	CERAMIC CHIP	0.47MF	10%	16V
C8451	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C8452	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8453	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8454	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8455	1-104-664-11	ELECT	47MF	20%	16V
C8456	1-104-664-11	ELECT	47MF	20%	16V
C8457	1-104-664-11	ELECT	47MF	20%	16V
C8459	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8464	1-104-664-11	ELECT	47MF	20%	16V
C8465	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8466	1-247-807-51	CARBON	100		
C8468	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8469	1-247-807-51	CARBON	100		
C8471	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C8474	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
		<CONNECTOR>			
CN8301 *	1-564-524-11	PLUG, CONNECTOR 9P			
CN8302	1-695-915-11	TAB (CONTACT)			
CN8304	1-793-498-11	CONNECTOR, BOARD TO BOARD 50P			
		<DIODE>			
D8101	8-719-073-01	DIODE MA111-(K8).S0			
D8102	1-216-295-91	SHORT	0		
D8301	8-719-158-35	DIODE RD9.1SB			
D8302	8-719-158-35	DIODE RD9.1SB			
D8303	8-719-158-35	DIODE RD9.1SB			
D8304	8-719-158-35	DIODE RD9.1SB			
D8305	8-719-158-35	DIODE RD9.1SB			
D8306	8-719-158-35	DIODE RD9.1SB			
D8307	8-719-158-35	DIODE RD9.1SB			
D8308	8-719-158-35	DIODE RD9.1SB			
D8309	8-719-158-35	DIODE RD9.1SB			
D8310	8-719-158-35	DIODE RD9.1SB			
D8311	8-719-158-35	DIODE RD9.1SB			
D8312	8-719-158-35	DIODE RD9.1SB			
D8313	8-719-158-35	DIODE RD9.1SB			
D8314	8-719-158-35	DIODE RD9.1SB			
D8315	8-719-067-40	DIODE STZ6.8N-T146			
D8316	8-719-067-40	DIODE STZ6.8N-T146			
D8317	8-719-067-40	DIODE STZ6.8N-T146			
D8318	8-719-158-35	DIODE RD9.1SB			
D8319	8-719-158-35	DIODE RD9.1SB			
D8320	8-719-158-35	DIODE RD9.1SB			
D8321	8-719-158-35	DIODE RD9.1SB			
D8322	8-719-158-35	DIODE RD9.1SB			
D8323	8-719-158-35	DIODE RD9.1SB			
D8324	8-719-158-35	DIODE RD9.1SB			
D8325	8-719-158-35	DIODE RD9.1SB			
D8331	8-719-041-97	DIODE MA113-(TX)			
		<FILTER>			
FB8101	1-414-598-11	INDUCTOR CHIP 0UH			
FL8301	1-236-071-11	ENCAPSULATED COMPONENT			
FL8303	1-236-071-11	ENCAPSULATED COMPONENT			
FL8304	1-236-071-11	ENCAPSULATED COMPONENT			
FL8305	1-236-071-11	ENCAPSULATED COMPONENT			
FL8307	1-236-071-11	ENCAPSULATED COMPONENT			
FL8308	1-236-071-11	ENCAPSULATED COMPONENT			
FL8309	1-236-071-11	ENCAPSULATED COMPONENT			
FL8311	1-236-071-11	ENCAPSULATED COMPONENT			
FL8312	1-236-071-11	ENCAPSULATED COMPONENT			
FL8313	1-236-071-11	ENCAPSULATED COMPONENT			
FL8314	1-233-877-11	FILTER, LOW PASS			
FL8315	1-233-504-21	FILTER, LOW PASS			
FL8316	1-233-504-21	FILTER, LOW PASS			
		<IC>			
IC8302	8-752-080-04	IC CXA2069Q			
IC8304	8-759-576-72	IC LF50CDT-TR			
IC8305	8-759-576-74	IC LF90CDT-TR			
IC8306	8-752-094-47	IC CXA2123AQ-T6			
IC8308	8-752-094-47	IC CXA2123AQ-T6			
IC8309	8-759-337-26	IC MM1115XFBE			
IC8310	8-759-572-04	IC TDA9178T/N1.118			
IC8311	8-759-485-79	IC TC7SET08FU(TE85L)			
IC8312	8-759-485-79	IC TC7SET08FU(TE85L)			
IC8314	8-742-175-00	HYB IC SBX3005-11			
		<JACK>			
J8106	1-793-787-11	JACK BLOCK, PIN 1P (KV-ES29M90 ONLY)			
J8301	1-774-748-11	TERMINAL BLOCK, S			
J8302	1-774-746-11	JACK BLOCK, PIN			
J8303	1-774-746-11	JACK BLOCK, PIN			
J8304	1-774-746-11	JACK BLOCK, PIN			
J8305	1-695-444-11	PIN JACK BLOCK 3P			
J8307	1-565-838-11	JACK BLOCK, PIN 2P			
		<CHIP CONDUCTOR>			
JR8301	1-216-295-91	SHORT	0		
JR8302	1-216-295-91	SHORT	0		
JR8303	1-216-295-91	SHORT	0		
JR8304	1-216-295-91	SHORT	0		
		<COIL>			
L8302	1-414-196-41	INDUCTOR	47UH		
L8303	1-414-196-41	INDUCTOR	47UH		
L8304	1-414-196-41	INDUCTOR	47UH		

REF. NO.	PART NO.	DESCRIPTION	REMARK
		<TRANSISTOR>	
Q8301	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q8302	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8303	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8304	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8305	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q8306	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8307	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8308	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8309	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8310	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8312	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8313	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8319	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q8320	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q8321	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q8322	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q8323	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q8324	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q8325	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8326	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8327	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q8328	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q8329	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8330	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8331	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8332	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8333	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8334	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8335	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8336	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8337	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8342	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8343	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q8344	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q8345	8-729-230-49	TRANSISTOR 2SC2712-YG-TE85L	
Q8346	8-729-026-49	TRANSISTOR 2SA1037AK-T146-QR	
Q8347	8-729-230-49	TRANSISTOR 2SC2712-YG-TE85L	
Q8348	8-729-026-49	TRANSISTOR 22SA1037AK-T146-QR	
Q8349	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8350	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q8351	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8352	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q8353	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q8354	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q8355	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q8358	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q8359	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q8360	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q8361	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8362	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8363	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8464	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8465	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8466	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8512	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	

REF. NO.	PART NO.	DESCRIPTION			REMARK
		<RESISTOR>			
R8208	1-216-295-91	SHORT	0		
R8209	1-216-295-91	SHORT	0		
R8301	1-216-041-00	RES,CHIP	470	5%	1/10W
R8302	1-216-041-00	RES,CHIP	470	5%	1/10W
R8303	1-216-021-00	RES,CHIP	68	5%	1/10W
R8304	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R8305	1-216-113-00	RES,CHIP	470K	5%	1/10W
R8306	1-216-022-00	RES,CHIP	75	5%	1/10W
R8307	1-216-022-00	RES,CHIP	75	5%	1/10W
R8308	1-216-105-91	RES,CHIP	220K	5%	1/10W
R8309	1-216-105-91	RES,CHIP	220K	5%	1/10W
R8310	1-216-022-00	RES,CHIP	75	5%	1/10W
R8311	1-216-105-91	RES,CHIP	220K	5%	1/10W
R8312	1-216-105-91	RES,CHIP	220K	5%	1/10W
R8313	1-216-022-00	RES,CHIP	75	5%	1/10W
R8314	1-216-105-91	RES,CHIP	220K	5%	1/10W
R8315	1-216-105-91	RES,CHIP	220K	5%	1/10W
R8316	1-216-113-00	RES,CHIP	470K	5%	1/10W
R8317	1-216-022-00	RES,CHIP	75	5%	1/10W
R8318	1-216-022-00	RES,CHIP	75	5%	1/10W
R8319	1-216-022-00	RES,CHIP	75	5%	1/10W
R8320	1-216-105-91	RES,CHIP	220K	5%	1/10W
R8321	1-216-105-91	RES,CHIP	220K	5%	1/10W
R8322	1-216-022-00	RES,CHIP	75	5%	1/10W
R8323	1-216-295-91	SHORT	0		
R8324	1-216-295-91	SHORT	0		
R8325	1-216-295-91	SHORT	0		
R8326	1-216-113-00	RES,CHIP	470K	5%	1/10W
R8327	1-216-295-91	SHORT	0		
R8328	1-216-113-00	RES,CHIP	470K	5%	1/10W
R8329	1-216-113-00	RES,CHIP	470K	5%	1/10W
R8330	1-216-022-00	RES,CHIP	75	5%	1/10W
R8331	1-216-295-91	SHORT	0		
R8332	1-216-295-91	SHORT	0		
R8333	1-216-295-91	SHORT	0		
R8334	1-216-295-91	SHORT	0		
R8335	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R8336	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R8337	1-216-022-00	RES,CHIP	75	5%	1/10W
R8338	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R8339	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R8340	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R8341	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R8342	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R8343	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R8344	1-216-022-00	RES,CHIP	75	5%	1/10W
R8348	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R8349	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8350	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8351	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R8352	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R8353	1-216-017-91	RES,CHIP	47	5%	1/10W
R8354	1-216-017-91	RES,CHIP	47	5%	1/10W
R8355	1-216-295-91	SHORT	0		
R8356	1-216-295-91	SHORT	0		

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REF. NO.	PART NO.	DESCRIPTION			REMARK
R8357	1-216-017-91	RES,CHIP	47	5%	1/10W
R8358	1-216-017-91	RES,CHIP	47	5%	1/10W
R8361	1-216-017-91	RES,CHIP	47	5%	1/10W
R8362	1-216-017-91	RES,CHIP	47	5%	1/10W
R8363	1-208-773-11	METAL CHIP	430	0.50%	1/10W
R8364	1-216-041-00	RES,CHIP	470	5%	1/10W
R8365	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8366	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8367	1-216-041-00	RES,CHIP	470	5%	1/10W
R8369	1-216-041-00	RES,CHIP	470	5%	1/10W
R8370	1-216-025-91	RES,CHIP	100	5%	1/10W
R8372	1-216-295-91	SHORT	0		
R8373	1-216-295-91	SHORT	0		
R8374	1-216-039-00	RES,CHIP	390	5%	1/10W
R8375	1-216-041-00	RES,CHIP	470	5%	1/10W
R8376	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8377	1-216-025-91	RES,CHIP	100	5%	1/10W
R8378	1-216-033-00	RES,CHIP	220	5%	1/10W
R8379	1-216-033-00	RES,CHIP	220	5%	1/10W
R8380	1-216-025-91	RES,CHIP	100	5%	1/10W
R8381	1-216-025-91	RES,CHIP	100	5%	1/10W
R8382	1-216-033-00	RES,CHIP	220	5%	1/10W
R8383	1-216-033-00	RES,CHIP	220	5%	1/10W
R8384	1-216-025-91	RES,CHIP	100	5%	1/10W
R8385	1-216-025-91	RES,CHIP	100	5%	1/10W
R8386	1-216-025-91	RES,CHIP	100	5%	1/10W
R8388	1-216-031-00	RES,CHIP	180	5%	1/10W
R8389	1-216-033-00	RES,CHIP	220	5%	1/10W
R8390	1-208-773-11	METAL CHIP	430	0.50%	1/10W
R8391	1-216-041-00	RES,CHIP	470	5%	1/10W
R8393	1-216-037-00	RES,CHIP	330	5%	1/10W
R8394	1-216-041-00	RES,CHIP	470	5%	1/10W
R8395	1-216-033-00	RES,CHIP	220	5%	1/10W
R8396	1-216-033-00	RES,CHIP	220	5%	1/10W
R8398	1-216-025-91	RES,CHIP	100	5%	1/10W
R8399	1-216-025-91	RES,CHIP	100	5%	1/10W
R8400	1-216-025-91	RES,CHIP	100	5%	1/10W
R8401	1-216-081-00	RES,CHIP	22K	5%	1/10W
R8404	1-216-033-00	RES,CHIP	220	5%	1/10W
R8405	1-216-033-00	RES,CHIP	220	5%	1/10W
R8406	1-216-033-00	RES,CHIP	220	5%	1/10W
R8407	1-216-033-00	RES,CHIP	220	5%	1/10W
R8408	1-216-033-00	RES,CHIP	220	5%	1/10W
R8409	1-216-295-91	SHORT	0		
R8410	1-216-295-91	SHORT	0		
R8411	1-216-083-00	RES,CHIP	27K	5%	1/10W
R8412	1-216-073-00	RES,CHIP	10K	5%	1/10W
R8413	1-216-041-00	RES,CHIP	470	5%	1/10W
R8414	1-208-796-11	METAL CHIP	3.9K	0.50%	1/10W
R8415	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8417	1-216-025-91	RES,CHIP	100	5%	1/10W
R8418	1-216-025-91	RES,CHIP	100	5%	1/10W
R8419	1-216-017-91	RES,CHIP	47	5%	1/10W
R8420	1-216-017-91	RES,CHIP	47	5%	1/10W
R8421	1-216-295-91	SHORT	0		
R8422	1-216-295-91	SHORT	0		
R8424	1-216-083-00	RES,CHIP	27K	5%	1/10W
R8425	1-216-089-91	RES,CHIP	47K	5%	1/10W
R8426	1-208-796-11	METAL CHIP	3.9K	0.50%	1/10W
R8428	1-216-295-91	SHORT	0		
R8429	1-216-295-91	SHORT	0		
R8430	1-216-295-91	SHORT	0		
R8431	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8432	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8433	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8434	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8435	1-216-295-91	SHORT	0		
R8436	1-216-017-91	RES,CHIP	47	5%	1/10W
R8440	1-216-295-91	SHORT	0		
R8441	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8442	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8443	1-216-025-91	RES,CHIP	100	5%	1/10W
R8444	1-216-025-91	RES,CHIP	100	5%	1/10W
R8445	1-216-017-91	RES,CHIP	47	5%	1/10W
R8446	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8447	1-216-025-91	RES,CHIP	100	5%	1/10W
R8448	1-216-025-91	RES,CHIP	100	5%	1/10W
R8449	1-216-025-91	RES,CHIP	100	5%	1/10W
R8450	1-216-089-91	RES,CHIP	47K	5%	1/10W
R8451	1-216-097-91	RES,CHIP	100K	5%	1/10W
R8452	1-216-089-91	RES,CHIP	47K	5%	1/10W
R8453	1-216-097-91	RES,CHIP	100K	5%	1/10W
R8454	1-216-089-91	RES,CHIP	47K	5%	1/10W
R8455	1-216-097-91	RES,CHIP	100K	5%	1/10W
R8456	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8457	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8458	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8459	1-216-025-91	RES,CHIP	100	5%	1/10W
R8460	1-216-025-91	RES,CHIP	100	5%	1/10W
R8461	1-216-025-91	RES,CHIP	100	5%	1/10W
R8462	1-216-089-91	RES,CHIP	47K	5%	1/10W
R8463	1-216-097-91	RES,CHIP	100K	5%	1/10W
R8464	1-216-025-91	RES,CHIP	100	5%	1/10W
R8465	1-216-025-91	RES,CHIP	100	5%	1/10W
R8466	1-216-025-91	RES,CHIP	100	5%	1/10W
R8467	1-216-041-00	RES,CHIP	470	5%	1/10W
R8468	1-216-041-00	RES,CHIP	470	5%	1/10W
R8469	1-216-041-00	RES,CHIP	470	5%	1/10W
R8470	1-216-069-00	RES,CHIP	6.8K	5%	1/10W
R8471	1-216-025-91	RES,CHIP	100	5%	1/10W
R8472	1-216-089-91	RES,CHIP	47K	5%	1/10W
R8473	1-216-025-91	RES,CHIP	100	5%	1/10W
R8474	1-216-097-91	RES,CHIP	100K	5%	1/10W
R8475	1-216-089-91	RES,CHIP	47K	5%	1/10W
R8476	1-216-031-00	RES,CHIP	180	5%	1/10W
R8477	1-216-033-00	RES,CHIP	220	5%	1/10W
R8478	1-216-089-91	RES,CHIP	47K	5%	1/10W
R8479	1-216-097-91	RES,CHIP	100K	5%	1/10W
R8480	1-216-073-00	RES,CHIP	10K	5%	1/10W
R8481	1-216-095-00	RES,CHIP	82K	5%	1/10W
R8482	1-216-089-91	RES,CHIP	47K	5%	1/10W
R8484	1-216-045-00	RES,CHIP	680	5%	1/10W
R8485	1-216-037-00	RES,CHIP	330	5%	1/10W
R8486	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8487	1-216-045-00	RES,CHIP	680	5%	1/10W

J **V (KV-ES29M81)**

REF. NO.	PART NO.	DESCRIPTION			REMARK
R8488	1-216-041-00	RES,CHIP	470	5%	1/10W
R8489	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8490	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8491	1-216-025-91	RES,CHIP	100	5%	1/10W
R8492	1-216-041-00	RES,CHIP	470	5%	1/10W
R8493	1-216-081-00	RES,CHIP	22K	5%	1/10W
R8494	1-216-041-00	RES,CHIP	470	5%	1/10W
R8495	1-216-081-00	RES,CHIP	22K	5%	1/10W
R8496	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8497	1-216-025-91	RES,CHIP	100	5%	1/10W
R8498	1-216-043-91	RES,CHIP	560	5%	1/10W
R8499	1-216-081-00	RES,CHIP	22K	5%	1/10W
R8500	1-216-033-00	RES,CHIP	220	5%	1/10W
R8501	1-216-081-00	RES,CHIP	22K	5%	1/10W
R8502	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8503	1-216-097-91	RES,CHIP	100K	5%	1/10W
R8504	1-216-295-91	SHORT	0		
R8507	1-216-025-91	RES,CHIP	100	5%	1/10W
R8508	1-216-025-91	RES,CHIP	100	5%	1/10W
R8509	1-216-025-91	RES,CHIP	100	5%	1/10W
R8510	1-216-041-00	RES,CHIP	470	5%	1/10W
R8511	1-216-041-00	RES,CHIP	470	5%	1/10W
R8512	1-216-017-91	RES,CHIP	47	5%	1/10W
R8513	1-216-039-00	RES,CHIP	390	5%	1/10W
R8514	1-216-039-00	RES,CHIP	390	5%	1/10W
R8515	1-216-295-91	SHORT	0		
R8516	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8518	1-216-047-91	RES,CHIP	820	5%	1/10W
R8519	1-216-047-91	RES,CHIP	820	5%	1/10W
R8522	1-216-041-00	RES,CHIP	470	5%	1/10W
R8524	1-216-041-00	RES,CHIP	470	5%	1/10W
R8525	1-216-033-00	RES,CHIP	220	5%	1/10W
R8528	1-216-025-91	RES,CHIP	100	5%	1/10W
R8530	1-216-041-00	RES,CHIP	470	5%	1/10W
R8532	1-216-041-00	RES,CHIP	470	5%	1/10W
R8533	1-216-041-00	RES,CHIP	470	5%	1/10W
R8536	1-216-025-91	RES,CHIP	100	5%	1/10W
R8538	1-216-041-00	RES,CHIP	470	5%	1/10W
R8540	1-216-041-00	RES,CHIP	470	5%	1/10W
R8541	1-216-039-00	RES,CHIP	390	5%	1/10W
R8544	1-216-041-00	RES,CHIP	470	5%	1/10W
R8547	1-216-295-91	SHORT	0		
R8548	1-216-033-00	RES,CHIP	220	5%	1/10W
R8551	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8556	1-216-025-91	RES,CHIP	100	5%	1/10W
R8557	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8558	1-208-776-11	METAL CHIP	560	0.50%	1/10W
R8560	1-216-025-91	RES,CHIP	100	5%	1/10W
R8561	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8562	1-208-776-11	METAL CHIP	560	0.50%	1/10W
R8564	1-216-025-91	RES,CHIP	100	5%	1/10W
R8565	1-216-049-91	RES,CHIP	1K	5%	1/10W
R8566	1-208-776-11	METAL CHIP	560	0.50%	1/10W
R8567	1-216-017-91	RES,CHIP	47	5%	1/10W
R8569	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R8570	1-216-017-91	RES,CHIP	47	5%	1/10W
R8572	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R8573	1-216-017-91	RES,CHIP	47	5%	1/10W
R8575	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R8576	1-216-013-00	RES,CHIP	33	5%	1/10W
R8577	1-216-295-91	SHORT	0		
R8578	1-216-033-00	RES,CHIP	220	5%	1/10W
R8579	1-216-295-91	SHORT	0		
R8582	1-208-291-11	RES,CHIP	4.7M	5%	1/10W
R8583	1-208-291-11	RES,CHIP	4.7M	5%	1/10W
R8584	1-208-291-11	RES,CHIP	4.7M	5%	1/10W
R8585	1-208-291-11	RES,CHIP	4.7M	5%	1/10W
R8586	1-208-291-11	RES,CHIP	4.7M	5%	1/10W
R8587	1-216-295-91	SHORT	0		
R8588	1-216-041-00	RES,CHIP	470	5%	1/10W
R8589	1-216-041-00	RES,CHIP	470	5%	1/10W
R8590	1-216-041-00	RES,CHIP	470	5%	1/10W
R8592	1-216-295-91	SHORT	0		
R8594	1-216-295-91	SHORT	0		
R8595	1-216-041-00	RES,CHIP	470	5%	1/10W
R8596	1-216-041-00	RES,CHIP	470	5%	1/10W
R8597	1-216-041-00	RES,CHIP	470	5%	1/10W

<CRYSTAL>

X8301	1-781-612-11	VIBRATOR, CRYSTAL			
X8302	1-781-612-11	VIBRATOR, CRYSTAL			

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* A-1342-516-A V BOARD MOUNTED (KV-ES29M81 ONLY)
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<CAPACITOR>

C1803	1-104-665-11	ELECT	100MF	20%	16V
C1804	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C1805	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C1806	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C1807	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C1808	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C1809	1-104-665-11	ELECT	100MF	20%	16V
C1810	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C1811	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C1812	1-104-665-11	ELECT	100MF	20%	16V
C1813	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C1815	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C1819	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C1821	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C1822	1-104-666-11	ELECT	220MF	20%	16V
C1824	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C1826	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C1827	1-104-666-11	ELECT	220MF	20%	16V
C1828	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C1829	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V

<CONNECTOR>

CN1801	1-793-496-11	CONNECTOR, BOARD TO BOARD 20P			

V (KV-ES29M81) VM

REF. NO.	PART NO.	DESCRIPTION			REMARK
		<DIODE>			
D1802	8-719-073-01	DIODE MA111-(K8).S0			
D1803	8-719-073-01	DIODE MA111-(K8).S0			
D1809	8-719-073-01	DIODE MA111-(K8).S0			
D1810	8-719-073-01	DIODE MA111-(K8).S0			
		<FERRITE BEAD>			
FB1801	1-410-397-21	FERRITE	1.1UH		
FB1802	1-410-397-21	FERRITE	1.1UH		
FB1803	1-410-397-21	FERRITE	1.1UH		
FB1804	1-410-397-21	FERRITE	1.1UH		
FB1805	1-410-397-21	FERRITE	1.1UH		
		<IC>			
IC1801	8-759-652-13	IC SDA5254-2B006			
IC1802	8-759-239-14	IC TA78L05S			
IC1803	8-759-042-02	IC S-80743AL-A7-S			
		<COIL>			
L1801	1-408-602-31	INDUCTOR	8.2UH		
		<TRANSISTOR>			
Q1802	8-729-230-49	TRANSISTOR 2SC2712-YG			
Q1803	8-729-230-49	TRANSISTOR 2SC2712-YG			
Q1804	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R			
Q1805	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R			
Q1806	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R			
		<RESISTOR>			
R1804	1-208-792-11	METAL CHIP	2.7K	0.50%	1/10W
R1805	1-216-025-91	RES,CHIP	100	5%	1/10W
R1806	1-216-025-91	RES,CHIP	100	5%	1/10W
R1807	1-208-816-11	METAL CHIP	27K	0.50%	1/10W
R1808	1-216-025-91	RES,CHIP	100	5%	1/10W
R1809	1-208-758-11	METAL CHIP	100	0.50%	1/10W
R1811	1-208-758-11	METAL CHIP	100	0.50%	1/10W
R1812	1-216-295-91	SHORT	0		
R1813	1-208-758-11	METAL CHIP	100	0.50%	1/10W
R1814	1-216-295-91	SHORT	0		
R1815	1-216-295-91	SHORT	0		
R1816	1-216-295-91	SHORT	0		
R1820	1-216-121-91	RES,CHIP	1M	5%	1/10W
R1821	1-216-041-00	RES,CHIP	470	5%	1/10W
R1822	1-216-025-91	RES,CHIP	100	5%	1/10W
R1823	1-216-089-91	RES,CHIP	47K	5%	1/10W
R1824	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1825	1-216-041-00	RES,CHIP	470	5%	1/10W
R1826	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1827	1-216-037-00	RES,CHIP	330	5%	1/10W
R1829	1-216-053-00	RES,CHIP	1.5K	5%	1/10W
R1830	1-216-063-91	RES,CHIP	3.9K	5%	1/10W
R1831	1-216-073-00	RES,CHIP	10K	5%	1/10W
R1832	1-215-859-00	METAL OXIDE	22	5%	1W F
R1833	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R1834	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R1835	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1836	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1837	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1838	1-216-025-91	RES,CHIP	100	5%	1/10W
R1839	1-216-025-91	RES,CHIP	100	5%	1/10W
R1840	1-216-025-91	RES,CHIP	100	5%	1/10W
R1841	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
		<CRYSTAL>			
X1801	1-781-685-21	VIBRATOR, CRYSTAL			

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*	A-1342-515-A	VM BOARD MOUNTED	
		**********	
	4-382-854-11	SCREW (M3X10), P, SW (+)	
		<CAPACITOR>	
C5401	1-126-935-11	ELECT	470MF 20% 16V
C5402	1-137-194-81	MYLAR	0.47MF 5% 50V
C5403	1-126-935-11	ELECT	470MF 20% 6.3V
C5405	1-126-933-11	ELECT	100MF 20% 16V
C5406	1-126-935-11	ELECT	470MF 20% 6.3V
C5407	1-107-364-11	MYLAR	0.01MF 10% 200V
C5408	1-107-364-11	MYLAR	0.01MF 10% 200V
C5409	1-107-649-11	ELECT	2.2MF 20% 250V
C5410	1-130-471-00	MYLAR	0.001MF 5% 50V
C5411	1-130-471-00	MYLAR	0.001MF 5% 50V
C5412	1-126-935-11	ELECT	470MF 20% 16V
C5413	1-107-648-91	ELECT	100MF 20% 160V
C5415	1-104-999-11	MYLAR	0.1MF 10% 200V
C5418	1-107-638-11	ELECT	33MF 20% 160V
		<CONNECTOR>	
CN5401*	1-770-723-11	CONNECTOR, BOARD TO BOARD 8P	
CN5402	1-764-334-11	PLUG, CONNECTOR 11P	
		<DIODE>	
D5400	8-719-911-19	DIODE 1SS119-25	
D5401	8-719-510-02	DIODE D1NS4	
D5402	8-719-911-19	DIODE 1SS119-25	
D5403	8-719-911-19	DIODE 1SS119-25	
D5404	8-719-911-19	DIODE 1SS119-25	
D5405	8-719-110-56	DIODE RD22ESB1	
D5406	8-719-110-56	DIODE RD22ESB1	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

VM

REF. NO.	PART NO.	DESCRIPTION				REMARK
		<COIL>				
L5400	1-412-525-31	INDUCTOR	10UH			
		<TRANSISTOR>				
Q5400	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q5401	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q5402	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q5403	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q5404	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q5405	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q5406	8-729-045-05	TRANSISTOR 2SA2005				
Q5407	8-729-045-04	TRANSISTOR 2SC5511				
		<RESISTOR>				
R5401	1-249-425-11	CARBON	4.7K	5%	1/4W	
R5402	1-249-415-11	CARBON	680	5%	1/4W	
R5403	1-247-739-11	CARBON	100	5%	1/2W	F
R5404	1-249-418-11	CARBON	1.2K	5%	1/4W	
R5406	1-249-425-11	CARBON	4.7K	5%	1/4W	
R5407	1-249-399-11	CARBON	33	5%	1/4W	
R5408	1-247-807-31	CARBON	100	5%	1/4W	
R5409	1-247-815-91	CARBON	220	5%	1/4W	
R5410	1-249-401-11	CARBON	47	5%	1/4W	
R5411	1-249-401-11	CARBON	47	5%	1/4W	
R5412	1-249-429-11	CARBON	10K	5%	1/4W	
R5413	1-249-414-11	CARBON	560	5%	1/4W	F
R5414	1-249-432-11	CARBON	18K	5%	1/4W	
R5415	1-247-739-11	CARBON	100	5%	1/2W	F
R5416	1-249-385-11	CARBON	2.2	5%	1/4W	F
R5417	1-249-432-11	CARBON	18K	5%	1/4W	
R5418	1-249-414-11	CARBON	560	5%	1/4W	
R5419	1-249-421-11	CARBON	2.2K	5%	1/4W	
R5420	1-249-421-11	CARBON	2.2K	5%	1/4W	
R5421	1-249-385-11	CARBON	2.2	5%	1/4W	F
R5422	1-249-405-11	CARBON	100	5%	1/4W	F
R5423	1-215-915-11	METAL OXIDE	470	5%	3W	F
R5424	1-249-395-11	CARBON	15	5%	1/4W	
R5425	1-249-401-11	CARBON	47	5%	1/4W	
R5427	1-249-395-11	CARBON	15	5%	1/4W	

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MISCELLANEOUS
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⚠ 1-251-374-51	CAP ASSY, HIGH VOLTAGE	
⚠ 1-419-294-11	COIL, DEGAUSSING	
1-452-094-00	CIRCULAR DISC MAGNET B	
1-452-032-00	MAGNET,DISC	
1-452-896-11	COIL, NA ROTATION (RT200)	
1-900-251-13	EARTH ASSY, COATING	
1-529-532-11	SPEAKER (5CM)	
1-505-473-11	SPEAKER (12CM)	
1-573-856-11	ADAPTOR, CONVERSION 2P (KV-ES29M90)	
1-569-008-21	ADAPTOR, CONVERSION 2P (KV-ES29M80/ES29M81)	
1-769-175-21	CABLE, ANTENNA (WITH FILTER)	
1-543-827-31	CLAMP, SLEEVE FERRITE	
⚠ 1-574-062-11	CORD, POWER (WITH CONNECTOR) 2.5A/250V (KV-ES29M80/ES29M81)	
⚠ 1-790-299-11	CORD, POWER(WITH NOISE FILTER) (KV-ES29M90)	
⚠ 1-419-469-11	COIL, LANDING CORRECTION (KV-ES29M90 ONLY)	
1-790-082-11	CABLE, RF	
⚠ 1-900-248-66	LEAD ASSY, FOCUS	
8-453-011-11	NA299-M	
⚠ 8-451-504-61	DEFLECTION YOKE (Y29RSC-S2)	
⚠ 8-735-041-05	PICTURE TUBE (M68LNH070X)	

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ACCESSORIES AND PACKING MATERIALS
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A-1028-194-A	PACKING GROUP (KV-ES29M90 ONLY)
A-1028-195-A	PACKING GROUP (KV-ES29M80 ONLY)
A-1028-196-A	PACKING GROUP (KV-ES29M81 ONLY)
3-867-756-11	MANUAL, INSTRUCTION (KV-ES29M90 ONLY)
3-867-756-21	MANUAL, INSTRUCTION (KV-ES29M80/M81 ONLY)
3-867-756-31	MANUAL, INSTRUCTION (KV-ES29M80/M81 ONLY)
3-701-910-00	SCREW, SPECIAL (DIA. 3.8X20)
* 4-062-487-01	TRAY
4-071-701-01	INDIVIDUAL CARTON
* 4-071-703-01	CUSHION (UPPER) (ASSY)
* 4-071-704-01	CUSHION (LOWER) (ASSY)
* 4-388-135-01	BAG, PROTECTION
* 4-396-077-01	JOINT
4-392-003-01	BAND, HOLD
4-392-004-11	CLIP

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REMOTE COMMANDER
****

1-418-566-11	REMOTE COMMANDER (RM-916)
4-074-721-01	BATTERY COVER, REMOTE COMMANDER

Sony Corporation
Sony Technology Malaysia Sdn. Bhd.
TV Business of General Area

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